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May We Offer . . .

COVER: The Wardman Park Hotel, Washington, D. C., site of the 20th Annual Meeting of the Institute of Traffic Engineers, September 25-28, 1949.

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LETTERS TO THE EDITOR

HISTORY

I have read with considerable interest your letter in the May 1949 issue of Traffic Engineering magazine to Miss Hale.

I think there is no doubt but that so far as is known at present the old Mexican road, referred to by you is the earliest example of the use of a center line. This road is still in existence and at least one member of our staff has seen it. It first came to our attention through an advertisement of the B. F. Goodrich Company about 10 years ago. I wrote to the Goodrich Company in an effort to get some information and was referred by them to Mr. Alexander L. H. Darragh, 4710 Woodlawn Avenue, Chicago, Illinois, who took the pictures which were used in the advertisement. Mr. Darragh wrote me giving the exact location of the road stating: "This old road crosses and recrosses the present motor highway several times, between Mexico City and Cuernavaca." The center line was made by the use of lighter colored stones in this old stone pavement. We have two of the photographs, both of which were copyrighted by Mr. Darragh.

Apparently your discussion in Traffic Engineering does not refer to any center line markings except those on the Mexican Road, and I may add it is frequently stated that the late Mr. Edward F. Hines, who was for many years Chairman of Wayne County Road Commission at Detroit, was the original inventor of the center line marking. If you care to write to Mr. J. L. Wehmeyer, Engineer of Safety and Traffic of the Wayne County Road Commission, 3800 Barlum Tower, Detroit 26, Michigan, he can perhaps supply more definite information as to exactly when center lines were first used in Wayne County. The old road commission reports, with their many illustrations should fix rather definitely the date of center line use in that county.

Roger L. Morrison
Member—ITE

Professor of Highway Engineering
and Highway Transport
University of Michigan
Ann Arbor, Michigan

On page 363 of the May 1949 issue of Traffic Engineering, there appears a letter to the editor entitled "History" signed by Betty L. Hale, Librarian. This letter is asking for information on the idea of painting a white line down the center of highways. Your comment following the letter is of interest but is not complete until you have further information on the happenings in Wayne County, Michigan. I think that I can supply you with this information.

Back in the middle nineteen-thirties, the question of the origination of the white centerline arose and the B. F. Goodrich Company conducted a search for the originator of this line. I quote the following from an article appearing in "This Week" magazine in the late thirties.

"When a few years ago the B. F. Goodrich Company conducted a search for the originator of the white highway line, a host of people appeared to claim the distinction. To settle the question, all the claims were turned over to a committee and a thorough investigation was made. Mr. Hines received a unanimous verdict and in November, 1936, at the 34th annual meeting of the American Automobile Association, he was presented with a plaque commemorating his service to highway safety. The plaque shows a ribbon of highway divided by a white line, to the right of which speeds a winged wheel."

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The Mr. Hines referred to was the late Edward H. Hines, who was Road Commissioner in Wayne County, Michigan, for a great many years. Mr. Hines also was a prominent member and official of the AAA, one of the organizers of the Automobile Club of Michigan, a prominent businessman in Detroit and, for many years, a bicycle and automobile enthusiast.

To quote further from the article dealing with the presentation of an award to Mr. Hines: "Back in 1911, however, the middle of the road was anybody's guess, with driving beginning to be synonomous with speed. Edward Hines was Road Commissioner of Wayne County, Michigan in those days and in the course of his duties he did a lot of traveling. Once, as he was approaching a narrow bridge, he saw a horse and buggy almost run down by an automobile. Yet the man behind the reins and the man behind the wheel each thought he was on his own side of the road.

"Mr. Hines immediately decided that one of the first things automobile drivers ought to know was where they belong on the road, particularly on narrow bridges and curves. So he ordered the white line painted down the center of every bridge and curve under his authority. Later he carried the idea to its logical conclusion and painted the line along all the highways."

J. L. Wehmeyer
Associate Mem.—ITE

Engineer of Safety & Traffic
Safety and Traffic Division
Wayne County Road Commissioners
Detroit 26, Michigan

———o———

NIGHT FATALITIES

At long last I have gotten around to looking through the May issue and I have a question and complaint about the boxed item on the bottom of page 367.

A similar statement used by the National Safety Council has appeared in several different forms. In the 1947 report of our Committee on Winter Driving Hazards, for instance, it appears as follows:

> "Special studies for each of the past eight years have shown that in the northern half of the United States, the mileage death rate is from 24 to 53 per cent higher during the winter months than in the summer months."

The statement as you printed it ascribes the higher rate (and the word "rate" is not even in the paragraph you used) to northern cities—while our statement quoted the rate as applying to the northern half of the country. As far as I know, no one has yet developed a mileage rate for cities.

More important, perhaps, is the fact that your paragraph credits the difference to lack of adequate street lighting. This seems utterly fantastic to me. The only conclusion I can reach is that you quoted a publicity release from the street lighting people.

Am I right?

David M. Baldwin
Associate Mem.—ITE

Director
Traffic & Transportation Division
National Safety Council
Chicago 6, Illinois

• Right!—ED.

———o———

GENERAL

Attached hereto is our subscription fee for the ensuing year for Traffic Engineering.

We want to tell you how much we appreciate the information that is available to us from your magazine because we represent nationally three of the companies who advertise in your publication; namely, Miro-Flex Company, Marbelite Company and Magee-Hale Park-O-Meter Company. The information which we get from this publication is of untold value.

E. T. Curlette
President

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———o———

I am a little late in making my comments but I do want you to know that I was very favorably impressed with the April issue of Traffic Engineering magazine; the first issue under our new publication staff. Certainly, this should augur well for the future.

Although I have not contributed much in the past to this magazine, I will endeavor to supply more material from time to time in the future.

Merwyn A. Kraft
Member—ITE

Director
Department of Personnel and
Accident Prevention
American Transit Association
New York City

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Organization of An Off-Street Parking Commission

by W. G. EWALD*

Ed. Note: This paper was presented on March 31, 1949, at the traffic engineering session of the Greater New York Safety Council's Annual Meeting in New York City.

In order to place my subject before you in its true perspective, I think it desirable, at the outset, to make perfectly clear that we do not have a parking authority. On the contrary, Baltimore has elected to endeavor to solve its parking problem by a "Commission" form of municipal agency, with very definite statutory limitations imposed upon its operations.

The underlying philosophy of the Baltimore plan is to deal comprehensively with the parking problem within the spirit and framework of our traditional competitive enterprise system and without subsidy or special privileges through tax abatement or other concessions. Although the Commission has been in existence only a relatively short time, we have confirmed our original belief that this is an exceedingly tough assignment and one that is challenging our greatest ingenuity and initiative and at the same time taxing our stamina and perseverance.

In the process of creating and establishing a working Commission, we have encountered a great variety of difficult and complex problems, and consequently our program has been slower than we had hoped or expected.

In this paper I shall endeavor to describe the nature of some of these problems and the measures which we have adopted in overcoming them. Following my presentation, I shall be very glad to elaborate on any special problems during the open panel discussion.

***Chairman, Off-Street Parking Commission of Baltimore.**

Creating a Commission

The initial step in developing the Baltimore program was taken by the Municipal Commission on City Plan in 1945 through the appointment of a Sub-Committee on Traffic and Parking, to study the off-street parking problem and submit recommendations. After an extensive study, this sub-committee reported that the parking problem offered the three following alternatives: First, the creation by the State Legislature of a parking authority to deal comprehensively and on a planned basis in assisting private enterprise—one that could collect sites and provide tax relief on improvements over a period of years; or, second, municipal financing, construction and operation of needed facilities; or, third, to let nature take its course and do nothing.

Noting that there was a deficiency of 5,000 off-street parking spaces in the central business district, the sub-committee concluded that the time had arrived for the community to face the facts and adopt an action plan that would increase the parking supply rapidly. It therefore recommended the creation of a parking authority with the power of condemnation and adequate loan funds to be made available to provide operators at rates suf-

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ficient to meet full interest and amortization charges. These recommendations in substance, but with some modifications, were approved and the City Government sponsored the introduction of suitable legislation into the 1947 session of the Maryland Legislature. However, this legislation was vigorously opposed and, after protracted debates and delays, it was finally enacted, but in an amended form. While the final product did not fully conform to the originally proposed legislation, at least it offered a promising beginning in solving the parking problem. In due time, appropriate conforming legislation was introduced into the City Council providing for the creation of an Off-Street Parking Commission and the delegation to it of powers deemed necessary for its effective operation.

Here again, the legislation met strong opposition. The chief difficulty was the Council's reluctance to delegate to the new Commission its traditional control over the location of sites for the establishment of parking facilities. The controversial issues were resolved in due time, but only after a second ordinance was presented to the Mayor for his signature, the first one having been rejected because of the extreme restrictions and limitations imposed upon the Commission's operations.

With the enabling legislation and the conforming municipal ordinances finally enacted, the Mayor in February, 1948 appointed a five-man unpaid Off-Street Parking Commission consisting of two attorneys, one banker, an insurance executive and a commercial organization executive.

A Plan of Operation

Here it should be stated parenthetically that the newly created Commission fortunately had the benefit of a comprehensive parking survey made in 1946 under the joint auspices of the federal, state and city governments. This survey showed a deficiency of 5,048 spaces in the downtown area of Baltimore, and it should be noted that this figure coincided closely with the previous survey made by the Planning Commission in 1945.

Now, with this data at hand and equipped with the power of condemnation and a million dollar loan, the Commission proceeded to go to work. As its task was of a pioneering nature, and not having any precedents to guide it, it endeavored to find out at once how other cities were attacking the problem and where possible to benefit from their experience.

It soon discovered that virtually all of the large cities, and some of the smaller ones as well, were in the same position that Baltimore was in. It learned that while many cities were *planning* solutions, very few had advanced far in *actually constructing* the needed facilities. There seemed to be a lot of talk but very little concrete action. In fact, our Commission found that very few cities had even established official Commissions. Among those that had done so, the Motor Vehicle Parking Agency in the District of Columbia seemed to exemplify the type of operation which was envisioned in Baltimore, and consequently the Baltimore Commission leaned heavily upon the Washington agency in laying the foundation for its operations and in actually starting its program.

With high hopes and a firm resolution, and realizing that the problem was a very complex one for which there was no easy or simple solution, but being ever aware of the public mandate for prompt action, the Commission applied itself assiduously to the task of formulating an aggressive attack involving a combination of proven measures. It proceeded to carry out these measures in accordance

with a comprehensive plan coordinated with the community's over-all program for dealing with the street traffic program generally.

Since the Commission, in accomplishing its purposes, was expected to depend largely upon the efforts of private enterprise, it was deemed highly important at the very beginning to establish a clear understanding of its intentions and its working relationships with those engaged in the parking business. As its first step, therefore, it issued a general policy statement, in which the Mayor and City Council concurred, outlining its plans and procedures.

This statement declared, in part, that the Commission was of the opinion that the provision of off-street parking facilities, on a permanent basis and in accordance with a long-range plan, was essential to the preservation, stability and efficient functioning of all business districts; that while it recognized that some municipalities were actually operating parking facilities, the Commission did not consider such municipal operation desirable for Baltimore except as a last resort and only after all other alternatives had been exhausted. It further stated that by prudent use of its powers and public funds in the acquisition of properly located sites, the Commission would stimulate, correlate and supplement the efforts of private enterprise.

Obviously the purpose of this declaration was to allay any fears that the City Government intended to go into the parking business in competition with private enterprise. It was also intended to encourage private enterprise to proceed with its own projects and demonstrate its ability to solve the community's parking problem.

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First "Obstacle" Encountered

Having thus proclaimed its policy, the Commission then called for less talk and more action on the part of all concerned. Exemplifying its own mandate for quick action, the Commission itself promptly initiated a study of the possibilities of utilizing city-owned property in the waterfront area. Within two weeks it announced the selection of a site in that area involving the creation of 250 additional spaces on a one-level parking lot capable of being expanded ultimately to accommodate 800 cars.

The Commission next turned its attention to privately-owned and operated facilities, with the view of expanding well-located, one-level lots into multiple deck facilities. Here the Commission got its first shock. It found that the statutory limitations imposed upon the use of loan funds were of such a nature as virtually to *"hog-tie"* its operations.

The chief obstacle arose from the fact that no proceeds from the loan cound be expended (a) until the Commission had prepared a written recommendation setting forth the terms and conditions upon which any property could be sold or leased, and (b) until the Mayor and Council, with the approval of the Board of Estimates, had entered into a binding contract with an operator for the sale or lease of any property at a price, charge or rental sufficient in amount fully to reimburse the City for all expenditures to be made in connection therewith and all interest on the funds borrowed and so expended on the project, and for all estimated real estate taxes that would be lost as a result of the acquisition of such property.

The Commission soon found that operators were unwilling to enter into such an agreement without knowing in advance the amount of money they were expected to pay and the type of facility they were expected to operate, all of which was impossible of ascertainment until the land was actually acquired and working plans prepared and contractors' estimates obtained. Then, too, the Commission was prohibited from using any loan funds for the retention of architects or engineers to prepare preliminary plans.

New Enabling Legislation

Faced with this impasse, it publicly acknowledged its inability to function efficiently and recommended that early steps be taken to remedy the situation. Thereafter, many conferences ensued with the Mayor, the City Law Department, private operators and the general business leaders of the community, after which agreement was reached that new legislation should be prepared and introduced into the special session of the State Legislature in June 1948, only a few months after the Commission had started its operations. Such new legislation, which was intended to eliminate all of the known obstacles, was promptly enacted. The Legislature also re-authorized the submission of a $5,000,000 loan for off-street parking, because in the process of securing new enabling legislation, it was necessary to repeal the earlier statutes and with them the authority to issue loans. The new $5,000,000 loan was overwhelmingly approved by the electorate in the last general election.

The new enabling legislation empowers the Commission to exercise its initiative in the acquisition of sites and in the preparation of project plans without first having to enter into a binding contract with a private operator. It also empowers the Commission to co-mingle its funds with those of private operators on privately owned projects without taking possession or otherwise controlling the project. This is believed to be a unique grant of authority and is intended to serve a two-fold purpose. First, an operator whose personal funds are in-

vested in business is expected to produce a more satisfactory operation than one without a personal investment; second, the Commission's authorized funds can be expanded to two or three times their effective utility by combining them with the operator's own funds.

Thus armed with broader statutory powers, the Commission then entered upon what might be conveniently described as its second legislative phase of operations, which started on January 1st of this year. However, while awaiting approval by the voters of the re-submitted off-street parking loan, the Commission utilized the intervening period from July to November of 1948 in contacting all of the private operators with the view of preparing tentatively an over-all plan for new and expanded projects, so that these projects could be made ready for prompt execution as soon as the anticipated loan funds should become available. During this preparatory period the Commission's staff engineer interviewed all of the principal operators, and after studying their various proposals prepared a comprehensive plan providing for approximately 6,000 additional spaces, 4,000 of which were to be located in the central business district and 2,000 in its perimeter area.

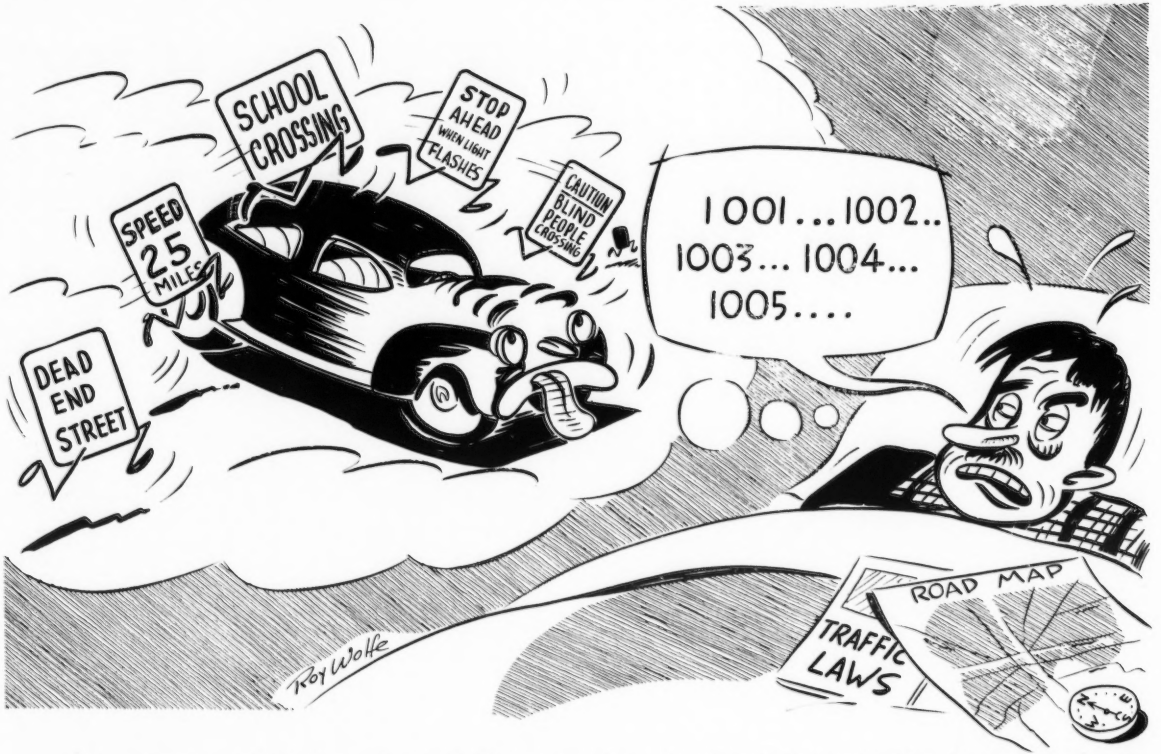
The Current Program

Thereupon with this data assembled, the Commission announced its readiness to proceed with its program. In order to preserve confidential relations with private operators, it conferred separately with each one and at these conferences outlined the Commission's general policies and procedure. In general, it offered to make loans to responsible operators of parking facilities, as well as those contemplating entering this business, in expanding existing well-located lots into multiple deck structures or in the acquisition of new sites, these loans to extend over a 20-year period at 2½% interest, with the understanding that this rate may be adjusted later if the City is able to borrow money at lower interest rates. It also outlined the steps to be followed by prospective operators in the Commission's preliminary consideration of a project. Briefly stated, this procedure calls for the submission of: (a) A sketch showing the outline of the property or properties involved, as well as names of owners; (b) A sketch of the structure showing the proposed lay-out; (c) Estimated cost; (d) The amount of funds the operator proposes to contribute to the total cost of the project; and (e) The present and proposed capacity in car spaces.

After this preliminary information has been checked by the Commission and approved by the Municipal Planning Commission and the Police Traffic Department and found to be favorable from the standpoint of planning, traffic flow and economic feasibility, operators are then requested to submit a formal application to the Commission treating fully and in detail the economic feasibility of the project, a financial statement of the applicant, a profit and loss statement for the previous year's operations (if the operator has been engaged in the parking business) covering his existing facilities and an estimated statement covering his contemplated facilities, and an outline of the proposed method of operation and rates to be charged.

In carrying on its current program, the Commission has found it desirable to give priority to those facilities which are or will be located in the areas of greatest need, as determined by the official parking survey. It has also adopted the policy of diversifying its loans in order to encourage the widest possible participation by pri-

(See ORGANIZATION, *page 534)*



Traffic engineers in most big U. S. cities are knee-deep in blueprints and traffic-volume reports striving for an answer to the unparalled traffic load. For the man behind the wheel the answer is usually a nightmare of more signs, more mazes, more signals, more "No's".

Experts Tackle Traffic Tie-up

by DONAL MCINTOSH*

Ed: Note: This article was originally published in Portland's "Oregonian" last March. We wish to thank Mr. McIntosh and the Editor of "The Oregonian" for allowing us to reproduce this excellent example of the value of the newspaper as a medium of arousing "traffic engineering consciousness" in the public.

Nearly 12,000,000 new motor vehicles have poured off the assembly lines in the last three years to join the millions already streaming along the highways.

Highways have twined the nation into a webbed knot of endless paved roadways, and urban congestion taxes the best traffic engineering brains in the country. Most traffic engineers, in most big U. S. cities are knee-deep in blueprints and traffic volume reports —and striving for the answer to this unparalleled traffic load, while the man behind the wheel finds more traffic directors and controls, more mazes, more "No U turns."

A sound, workable system of traffic engineering is not something any city can obtain over night. Portland has been working a long time at ironing out its traffic problems and in 1947 was selected by the National Safety Council as having the nation's best standard of traffic engineering—in theory and in practice—for a city of its size.

Northwest leaders in traffic engineering are known all over the country for their accomplishments, and the city's traffic engineer, Fred T. Fowler, on the job since 1937, is nationally recognized for his work in traffic control pioneering.

George Howie, who trained under Fowler for ten years, was recently enticed to Cincinnati to take over the reins of that municipality's traffic engineering department—making it obvious that Cincinnati recognizes the value of training and experience under Portland's Fowler.

Holden LeRoy, now traffic signal engineer in the city of Detroit, also got his start in the Portland office.

Oregon's Pioneers In Traffic

Oregonians have plenty of recognized experts to spread the gospel of adequate traffic engineering. Oregon State College professor Bob Glenn has been teaching budding engineers for nearly 25 years.

Bruce Crandall, present state traffic engineer, got his start under John Beakey, one of the pioneers in the business who died in 1946 of shrapnel wounds received in Normandy. Many of the devices now considered stock in trade by traffic engineers were either dreamed up or greatly improved by the team of Fowler-Beakey. While Beakey was state traffic engineer, this able team originated Portland's oft-praised plan of signal installation.

The Fowler-Beakey signal system got its trial run in Klamath Falls. Second installation was made in Portland at N. E. Union Avenue and Lombard Street, and the system is now in general use through the city. Although Portlanders take their walk-wait system for granted, the principle behind the signals, that of the separation of vehicle and pedestrian controls, is relatively new. Pedestrians are no longer confused by signals intended for wheeled vehicles and vice versa—the motorists' signal is so constructed that its rays are directed at the driver by louvers and cannot be seen by the

*Assistant Director Portland Traffic and Transportation Commission.

unparalleled traffic load. For the man behind the wheel the answer is usually a nightmare of more signs, more mazes, more signals, more "No's".

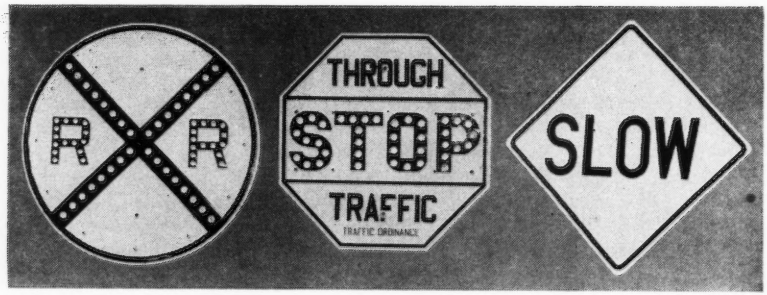
pedestrian except as a dim reflection of color on foggy or misty days. Most drivers also favor the new system of putting the motorist's signal light overhead and directly in front of traffic approaching on all four sides of an intersection.

Police Formerly Installed Signs

Prior to 1937, and the formation of the present traffic engineer's department, installation and upkeep of traffic regulations were the job of the local police. Police trusties painting the street strips and markings by hand, were a common sight.

old red-green signal. Only reminder of the amberless days are eight signals still functioning at S. E. Milwaukee Avenue and Powell Boulevard, N. W. Broadway and Glisan Street and on West Burnside.

The stop buttons which were rough on tires and impeded snow removal, bowed out during the traffic department's modernization program and were replaced by the two-feet wide octagonal signs, highly reflectorized, which keep today's cars on the right path.



Slowly but surely, standardization of traffic signs is coming. Motorists instantly recognize standardized railroad crossing sign, left; octagonal stop sign, center; and slow sign, right, by distinctive shapes, colors, and legends.

If the multiplicity of loading zones plague would-be parkers now, think what the situation was prior to 1937. At that time merchants were allowed (or obligated, depending upon the merchant's viewpoint) to paint their own loading zone markings. And the zones had a way of taking in more and more street area with each repainting. Zone marking, since 1937, has been standardized so that curb space is more equitably allotted.

The "forever ambers" of the present —the warning light which has undoubtedly cut down the traffic death toll and certainly has saved Portland drivers many a brake-relining bill— have almost completely supplanted the

Controls Modified in Portland

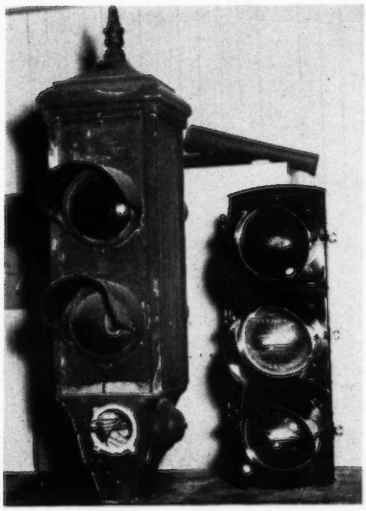
The whole battle of the traffic engineering department is not to harass the motorist with signals—as some drivers seem to think—but to cut down the lists of traffic fatalities and injuries. Traffic engineers have their own proof that traffic regulation works —fatalities are rare on adequately illuminated streets with progressively timed system of traffic lights.

New twists are being applied constantly by engineers with their fingers on the city's traffic pulse. Briggs Clark, Portland traffic engineer, has developed a traffic signal controller with a specially designed box which

is a master-robot of metal and parts. The Briggs-Clark model is "stop" only so far as its timing motor. A clock, flashing units, relays, and miles of tiny wires are built into a compact unit, and a locally-designed cabinet placed around it. When completed and installed, the controller acts as a nerve center for progressively changing Portland's traffic signals. Should power failures at any signal put it out of synchronization the master control box automatically makes the necessary adjustment.

Some controls are not so thoroughly robotized and when affected by power failure automatically return to operation as a flashing red and amber signal until a maintenance crew can synchronize them manually.

Only scarcity of vital materials and an inadequate budget have kept the traffic department from putting a complete plan into operation. Stop-gap measures have been devised so that "permanent" controls may be installed as soon as materials, or money, become available. Next on the agenda is automatic synchronization from a master control box of the signals on Union Avenue. When this is accomplished, the controller will change the length of the signal during certain periods of the day, the built-in clock lengthening the green signal on through streets during the peak periods. Once set for this change of pace, the operation is completely automatic.



Traffic signal light at left, "dangerous" because it has no warning amber light, is being replaced by new-style control shown at right.

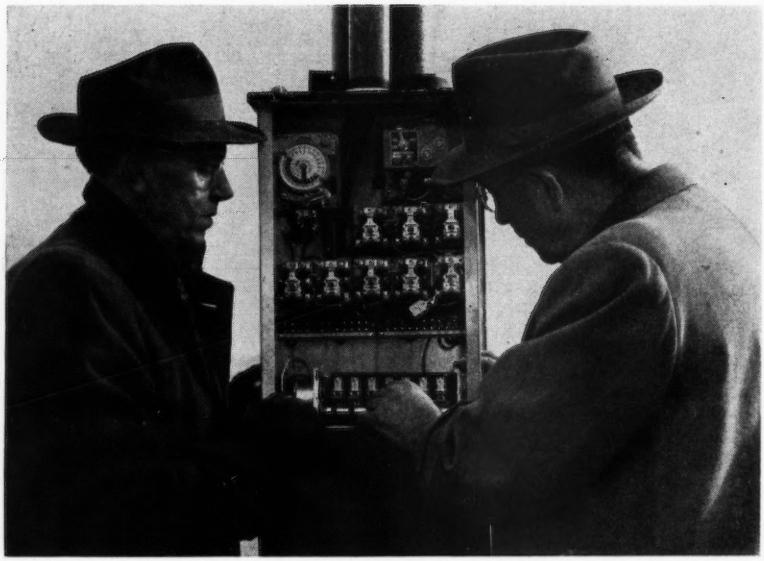
It's a far cry from the 1920s. Then signals were adjusted by a crew of policemen on two-shift 24-hour duty in the basement of the Morgan Building who worked with a maze of complicated wires attached to a switchboard.

In late years, the state highway department, which once did all painting of center lines in Portland, has concerned itself only with center lines, stop lights, speed markers and directional signs on city streets that are part of the state highway system. Even on the state routes—and there are eight in Portland—the city has sole jurisdiction on parking.

Curbs Used to Mark Center Lines

One of the leaders in experimental traffic control work, Oregon ten years ago departed from the once-standard white-line and experimented, on Denver Avenue, with red paint on white concrete. The paint wore well, but its visibility did not compare with yellow. It had long since been discovered that white was all but invisible on wet or foggy days. During 1948, 4000 gallons of yellow paint, now nationally recognized as the top color for visibility, was used on Portland streets.

States vary in their tastes for street-center indicators. Oregon uses raised divider curbs and asphalt cross ribs. Texas uses a quick-drying cutback of asphalt with a chip covering. New Jersey has tried "singing separators"



Briggs Clark, left, traffic signal engineer, and Fred T. Fowler, Portland traffic engineer, make adjustments on a traffic signal control box. Controller regulates length of signal, synchronizes traffic lights between intersections.

that hum when drivers are off the beam and are particularly effective during fog and rain.

Oregon has done her share in control pioneering now accepted on a national scale. It was Fred Fowler's experimentation in 1937 that led to the national changeover from red to white signal buttons—the glass reflectors which flash back a warning when struck by car lights. The experimenting, though highly successful, was rough on motorists whose daily driving took them by the intersection of Burnside and N. E. 39th—colors of stop signs were changed almost weekly.

After the white buttons received the city's okay, the state highway department adopted them and national acceptance followed soon after.

Portland's signs and markings conform 100 per cent to the national standard. Traffic signals, which are off-standard by about 20 per cent, are being hurried toward complete conformity.

When standardization on a national scale is complete, motorists will feel at home in any state. There will be no need to "read" each sign—recognition of a standard shape or symbol will be ample warning of any danger.

Traffic engineers have had a tough job keeping up with mushrooming vehicular traffic. Obviously, they can't rebuild the cities designed for horse and buggy transportation, so they do the next best thing—make use of existing street facilities.

Such innovations as one-way streets may not be a cure-all, but they're the best solutions available. And as long as the traffic engineers meet and surmount the problems attendant to 20th century traffic control, traffic fatalities will be kept in check.

Highway Planning Symposium

PART II

by DEAN J. LOCKE*

Ed. Note: This is the second in a series of three papers presented before the Washington Section, ITE, at its January 1949 meeting. The first discussion on the financial and economic aspects, by Yule Fisher, appeared on page 272 of the March issue. Mr. Locke presents the transit viewpoint or urban highway planning as it relates to the desires and needs of various types of intra-city transportation. Part III, relating the needs of the intra-city truck operator, will be discussed by Mr. F. H. Floyd in a future issue.

It is most unlikely that what I have to say tonight will be novel to you of the Washington Chapter who deal regularly with traffic matters and city planning. But if I am able to bring together in one clear picture for your consideration at this time the special combination of problems and needs which confronts the operators and planners of one large urban mass transit system and their desire to make better use of their facilities, I feel that I will have accomplished my purpose.

The Transit Problem and the Need

Today the problems of traffic congestion affect almost everyone in an urban community, whether they live, conduct business or work in the suburbs, or in the heart of the business area. Many minds are devoted to the study of means to improve the situation, but in spite of all efforts, the problem seems to be getting worse all the time and in some places is out of hand.

Because of the tremendous costs involved, and the lack of funds, the remedial measures and improvements have, in most instances, been scattered. Progress has been painfully slow, and not equal to the over-all need. It appears that most of the efforts for the improvement of traffic conditions in the metropolitan area have been designed to provide more rapid access to the downtown area for more and more automobiles, without, at the same time, providing adequate terminal facilities for either the current numbers using the highways or the numbers which the highways will provide for when finally enlarged.

With that as an introduction, I now propose to describe the greatest need of the intra-city mass transit system and to show that its reasonable fulfillment should provide the solution to the problem of traffic congestion generally. *The need is the means of moving masses of people speedily and non-stop between the suburbs and downtown.*

The "Transmission" Element

The fundamental elements of all public utilities, such as electric light and power, gas, telephone and transit can be said to be the same, in that each has a generating, a transmission and a receiving element. Unless each element in a system is properly apportioned and designed, this system does not function as efficiently as it should.

*Staff Engineer, Capital Transit Company, Washington, D. C.

In the transit system, the elements can be described more specifically as the suburban terminals and passenger stops for the generating element, the highways for the transmission element, and the downtown passenger stops and terminals for the receiving element.

It is in its "transmission" element that the transit system suffers very severely in comparison with its sister utilities. In the power system, for example, the transmission element is varied in character, the different distribution and transmission lines being operated at voltage and capacities best suited to the needs imposed by volume and distance. The 110 and 220-volt energy required in individual homes and offices is not conducted from the power station to the point of consumption at 110 or 220 volts but at much higher voltages. Neither is the transmission system required to carry over the same wires the entirely different voltages and the minute quantities of energy involved in telephone and telegraph communication. In contrast, the transit system is required to conduct practically all of its business at the 110- and 220-volt level, so to speak, regardless of the number of units served and the distances covered. It also is required to share its transmission lines with almost every individual who, either on foot or in a private vehicle, wishes to use the lines.

The transit system has all the modern equipment, manpower and know-how necessary to operate a passenger-carrying system which could and would be sufficiently effective to solve many of the traffic problems of the

The above photo, showing Washington's 14th Street, N.W., between New York Avenue and G Street, typifies the need for an adequate "transmission" system to alleviate congestion in the central business district.

more congested areas if it only could be provided with an adequate transmission system giving more speedy avenues of access to the central district. Now, because buses from the suburbs have to share the streets with all other types of vehicles, their average speed is below 10 miles per hour and declines to 4 or 5 miles per hour downtown. As the city grows and more and more automobiles are operated, the speeds of all traffic decline and the costs of operation go up. Patrons desert transit service because of the declining speed and increasing fare necessary to support the system, and the whole problem of the transportation of persons and commodities becomes worse. So public agencies widen streets here and there, build grade separations at individual congested intersections and tighten up on the use of street space at curbs for all-day parking. But still the problem is not solved and congestion increases. A stupendous task lies ahead, requiring the coordinated efforts of all agencies involved. Transit companies alone can accomplish little.

Urban Congestion at the Saturation Point

What is the basic difficulty? In general, just one. With the increasing population, the point has been reached where the local highway system is not sufficient and cannot be made sufficient, except at tremendous expense, to accommodate the passage of all the vehicles and all the people who want to use it just as they please. No longer is there sufficient room between curbs for everyone wanting to use his automobile to drive over the street and to park at a curb of his own choosing. Neither is there space available between buildings for much further widening of streets, nor are there funds available for such widening.

But just suppose the highways could be widened at a price to permit the movement of more vehicles into and out of the downtown terminal area. It is obvious that more and adequate terminal facilities would have to be provided. Most auto and truck users driving downtown need time to shop, to load or unload or to remain for part or the whole of a business day, but the allowable curb parking spaces now are completely occupied and their limited number is being reduced as more space for moving vehicles is required. Also the off-street parking spaces are being reduced as more buildings are being erected. Parking garages are limited in number and in total capacity.

It appears that the current upward trend of auto and truck movements into and out of the downtown area cannot continue and that the capacity for such vehicles has been reached, if not exceeded. Can anyone view calmly the further inevitable slowing down of traffic movements, the greater accident hazards and the increasing pressure for decentralization, if means are not taken to reverse the current trend?

Transit Efficiency Should be Recognized

Is there not a means by which this unfortunate trend can be reversed? The transit industry thinks so and lists it as its No. 1 *need*. This industry believes that a fuller recognition is needed of the inherent efficiency of the modern motor bus, and also the modern street car in a more limited field, and that the adoption of means to utilize this inherent efficiency will go a long way toward solving the problem of urban traffic congestion in a manner far less costly than the processes now at work.

Let us start with the basic fact that one modern motor bus has the rush-hour carrying capacity of about 50 automobiles and need create no serious terminal or parking problem. Take the number of automobiles on any overloaded main artery which are in excess

of those which can be accommodated without serious congestion and divide this number by 50. The quotient, added to the auto remaining then gives the number of vehicles to be accommodated on the highway in question. Mathematically, this solves the problem but how can this seeming wizardry be accomplished? Surely not through compulsion. But if a relatively few existing radial highways were designated for use primarily by buses during rush hours and were signalized for uninterrupted progression of buses for distances of 5 or 6 miles at an average speed of, say 30 miles per hour, then large numbers of auto users most certainly would use the buses. With application of this principle to each sector of the city, the need for all existing and for wider streets for use by private autos in long haul would disappear and those presently available would be adequate for the necessary express and remaining local movements. Obviously, the street system should provide for the by-passing of traffic around the congested areas where the traffic has no concern with the area. That is a need in any event.

Adequate Terminal Facilities Necessary

The second need of the transit system is adequate terminal facilities. Let us take suburban terminals first. At present, a zoning regulation prohibits the re-zoning of residentially zoned land for use as off-street bus turnarounds and terminals. This requires the operation of buses either around blocks with several turns or uneconomical extensions of routes and the standing of buses at curbs, often opposite residences. The need here is for a more realistic approach to the transit company's problem.

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In our opinion, the establishment of large so-called fringe parking lots at a few locations close to the downtown business area will not contribute to the reduction of traffic and congestion on the surrounding outside highways. In our opinion, these parking lots should be located much further out in areas of generating traffic where land is more readily obtainable and lower in cost and on radial highways which can be devoted primarily to the operation of high-speed express bus services.

Now as to the downtown terminal problem, which is an acute one today because of the hordes of milling vehicles seeking places to stop and park. It would appear that this problem can be solved far more cheaply for buses than for automobiles. While the ideal situation contemplates off-street terminals only, these appear not to be necessary in most cases. A few, well distributed, small, off-street terminals would minimize the concentrations of bus movements on the streets and the dead mileages. No all-day or long-period parking is involved, as with autos. Future government office buildings, large generators of traffic in Washington, should have built-in bus terminals.

The Evils of Traffic Attenuation

There is one other need which I would like to refer to briefly. This is for the correction of an evil which is the opposite of traffic congestion. I choose to call it traffic attenuation. This is the situation which is found out in the counties. Let me illustrate. A few days ago a real estate developer came into my office to ask whether we would agree to extend bus service to a 1,500-family community which is being planned on a 200-acre tract. This tract now is wholly undeveloped as to roads, sewers, gas, electricity, and is far out in the country, midway between arterial highways. It is about 4 miles from the city line by way of the roads likely to be available, and 10 miles from downtown. The intervening area is relatively sparsely settled and could contribute little patronage to the service proposed. Baltimore-type row houses are planned which, with the low cost of land, will permit rentals below the lowest currently available in new homes.

The developer indicated that FHA might finance the project if we would agree to establish the bus service. Without such an agreement, FHA probably would turn him down, he intimated. Believe it or not, this was the first time in many years when it appeared that my company might have some influence in such a matter, since many another similar project appeared to have been completed under these auspices without any inquiry of us as to the economics of the transportation system for such an undertaking or as to my company's ability to serve.

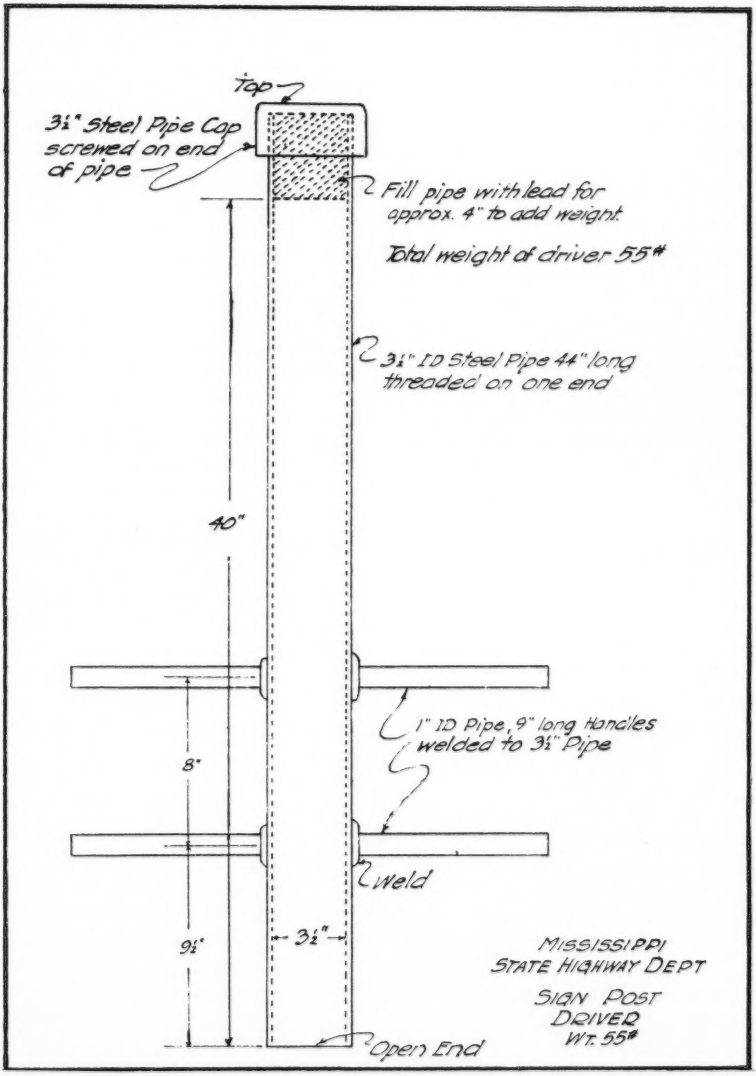
In declining to give the developer any assurance as to the establishment of the requested bus service, I pointed out to him that he was, in fact, but perhaps unconsciously, asking that the established patrons of the transit system subsidize almost two-thirds of the cost of providing the service which he requested and of practically the whole amount of the monthly rental which he proposed to save his tenants by his lower costs of construction.

Is the transit company the only utility so beset out in the counties? I think not. The county government and its taxpayers have the same basic problems and headaches with their roads, and their sewage and water systems and their schools. The gas company, the electric company and the telephone company each has its share

(See SYMPOSIUM, *page 534)*

Reference Notes

by ARTHUR M. WHITE
Asst. Engineer of Maintenance,
Mississippi State Highway Department



The Mississippi State Highway Department is using several of these drivers and has found them highly satisfactory for use in driving sign posts. They use a "U" type steel sign post and by using this driver, two men can erect a sign in a very short time.

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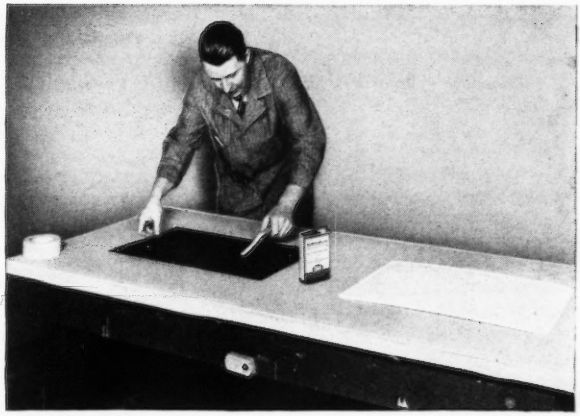
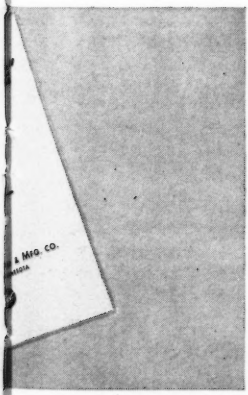


FOR HAND application to flat signs, simply apply activator. *Spraying or brushing of adhesives is no longer necessary. Drying time and racking are eliminated.*



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ORGANIZATION

(Continued from page 519)

vate operators in the Commission's program as well as to insure maximum safety of its investments.

A Review of Assets

From the above review, it is apparent that the Commission is still in its early stages of operation. Consequently it would be premature and foolhardy to make any broad claims concerning its actual or anticipated accomplishments. It can be said that it is now processing four definite projects, the first of which is expected to be ready for submission to the City Government for approval in a very short time. The Commission is cutting its proverbial eye teeth on the first proposal and perhaps fortunately has been obliged to deal with a number of major policy matters in connection with it. This contract, when approved, is expected to establish a pattern for the Commission's future operations and as a result of the lessons learned from this initial project, it is assumed that the Commission in the future will be able to proceed much more rapidly. Again, parenthetically, it is interesting to point out that the Commission already has been obliged to ask for ten official legal opinions from the City's Law Department.

One of the significant by-products of the Baltimore Plan is the fact that, as a result of the favorable climate created for private enterprise through the Commission's initial reassuring policy declaration, the parking industry itself is going ahead with a number of projects not requiring Commission aid. At least three such projects are currently providing 700 additional spaces at strategically located sites in the central business district.

Taking all things into consideration and recognizing the complexity of the problem we are dealing with, the Baltimore plan appears at this time to give some promise of substantially alleviating the community's parking problem. It may not furnish a complete solution, but at least we have made a positive start and we believe we are now on our way, although our experience to date has seemed slow and at times disappointing when viewed in relation to the fact that the Commission, since its formation about a year ago has held more than 25 formal meetings and participated in countless conferences.

To sum up, if we were to take a trial balance now of our operations, we would have on the asset side: (1) A well-established active and informed Commission which has learned many practical lessons during the past twelve months; (2) Improved enabling legislation with virtually unrestricted power of eminent domain; (3) A $5,000,000 loan available at low interest rates over a long period of time; (4) A comprehensive parking survey and, what is most important, (5) A favorable climate for private operation.

(SYMPOSIUM, *Cont'd from pg. 529)*

of the troubles arising from uncoordinated and uncontrolled suburban development.

Urban Planning For Improved Transit Operation

Now let us summarize the elements of *urban planning* that are needed by urban mass transit to permit it to do an adequate job:

1. Residential areas within the city or in outlying suburbs should be continuous wherever the topographical features will permit. Too often various residential developments are located in hit and miss fashion and are thus scattered and broken. As a result, it

is generally impossible to provide an adequate or attractive transit service at the fares that patrons are willing to pay.

2. The internal roadway structure of each large residential development should be of such a nature that transit service can be provided within what is considered a reasonable walking distance for the large majority of home sites. Suitable areas should be set aside for transit terminals and stops.
3. The street systems of adjoining residential projects should be integrated with each other in order that they may be served by the same transit routes, if necessary. Frequently in the past, suburbs have been laid out without any regard to the street systems which have been established previously in adjacent areas. This has resulted in transit routes either being confined to one project or, if extended to serve several communities, operating only at the cost of excessive mileage.
4. Developers of suburban residential areas and the owners of large apartment projects should be willing to subsidize transit service for the period of development, if the service is established in the prospect of its eventually being self-sustaining. Otherwise, the service should be subsidized during its entire period of operation.
5. A comprehensive street system plan should be adopted. The design of this plan should be governed primarily by the principle of directed or controlled traffic movement, determined from over-all origin-destination surveys.
6. The street system should be laid out on a preferential basis for various types of traffic movement. This can be done without costly expressway projects through the establishment of coordinated signal systems, channelizations, one-way streets, etc. In the designation of preferential streets, the primary element to be considered is the relative speed at which traffic can move and not the type of vehicle composing the traffic volumes. On local streets, where there is frequent stopping and standing, and over-all speed is comparatively low, both private and public transportation can be accommodated without adversely affecting either. Likewise, there is no reason why both public and private transportation cannot operate at relatively high speeds on streets which have been designated as through or arterial streets, providing that public transportation stops are limited and properly located and designed. In the treatment of streets, emphasis should be placed on expediting that type of transportation which carries the most people, rather than that type of transportation having the most vehicles.
7. Expressways, if constructed, should be located and designed for maximum usage by transit vehicles. This will offset the encouragement of use of the expressways by private transportation vehicles into the downtown areas, which, in most cities, are no longer able to absorb the present volumes of private vehicles entering via the street systems.

These are a few highlights in the appraisal of the operational needs of urban mass transit systems. I feel sure their recitation here will provoke discussion. That is a privilege you have extended me and one which I appreciate very much.

ITE NEWS AND PERSONALS

Secretary's Column

Scattered reports from ITE members and "propaganda" from the Washington Section indicate that this year's annual convention will far exceed in attendance any previous meeting. The Local Arrangements Committee has planned an excellent program of entertainment with the aid of Armand Keeley's special fund-raising committee. The Wardman Park Hotel has set aside an entire wing of five rooms for ITE Headquarters (Bull) Room. Total registration and special events fees are not expected to exceed the Detroit "package program" of 1947. More members are planning to bring their wives to enjoy the excellent program planned for the ladies. Ted Holmes' committee has prepared an excellent technical program with an imposing list of key speakers and up-to-date topics for discussion. All in all, this is one meeting no member should miss and we sincerely hope our special invitations will adequately cover our host of interested officials and engineers.

By the time this issue is distributed, voting members (i.e., Members and Associate Members) will be in receipt of proposed changes in the *Institute's* Constitution and By-Laws relative to geographical representation of Directors. These changes will be discussed at the Annual Business Meeting scheduled for the afternoon of September 25th in Washington. All members may attend this business meeting and participate in the discussions. A large "spot map" of ITE membership, showing the geographical boundaries will be provided by your national headquarters. It is hoped that all members in attendance at this meeting will carefully study these far-reaching changes and be prepared to take appropriate action prior to final submittal of the revisions for balloting within 45 days after the annual meeting.

Robert S. Holmes

PERSONAL ITEMS

In attendance at the recent President's Highway Safety Conference in Washington we find **RALPH DORSEY** and wife on the first leg of a 10,000-mile auto tour originating in Los Angeles, via Washington, Quebec and other Canadian points, then back to Portland and the annual meeting of the Western Section, ITE, and Western Safety Conference, before returning to Los Angeles. We know from experience last summer on a similar junket that Ralph and the Mrs. will need until Christmas to "recover" . . . . **HARRY NEAL, CHARLIE PRISK, EARL CAMPBELL, BUD YOST** and **DON BERRY** in an informal meeting to coordinate research activities of AASHO, PRA, HRB and ITE . . . . **AL PEPPER** and **HANK BARNES** all the way from Colorado Rockies . . . **JOE HAVENNER** and **GLEN SMOOT** other Western Section celebrities . . . . **HAROLD HAMMOND, FRANK TWISS, HANK OSBORNE** and **TOM SEBURN** in an informal "bull session" at the Statler . . . . **GEORGE HOWIE,** another

"autoist", with family from Cincinnati taking in the Washington sights . . . . **CY VEY, DON McNEIL, HARRY PORTER, BOB BURCH** and **JIM DARRELL** prowling the lobby of the Statler . . . . **Full** Member **FRED FISCH** regaling a group of ITE'ers with some of the "latest" stories from the archives. Polite listeners included **BOB MITCHELL, NAT CHERNIACK, TED MATSON** and **FRED HURD.** Ask Fred F. some time about his favorite dessert, "Irish Ice Cream" . . . . **BOB BURCH** drifting into the Board of Direction meeting . . . . **GRANT MICKLE, BURT MARSH, LEVERNE JOHNSON, WALLY BRAUN** and the other "local ITE's" buzzing around the various sessions . . . . **PHIL MANCINI, EDDIE COPELL** and **DWIGHT MYERS** from up New England way . . . . **WALTER MATTHEWS** gadding about, happy with the thought that the Annual Meeting is **not** in PHILADELPHIA this year . . . . **WAYNE VOLK** on his first "out-of-state" (Wisconsin) trip in many moons . . . **HOWARD ILGNER** and wife also in from the Dairy State . . . **LOU ANDRIACCHI** hasn't changed. He still "sees the light"—Scotch **lite** that is . . . . **GEORGE PAPAGEORGE, BILL BRANDES** and **ARTHUR WHITE** from the "deep south" you-all . . . . **AL MALO** and **CARL McMONAGLE** representing the Michigan Section. Many more ITE'ers in town but we've run out of space. Hope they'll all be back in September.

SECTION NEWS

New England Section

On the evening of May 11th, about 45 regular and student members of our Section met at the State Fair Restaurant in New Haven for the principal spring meeting.

The annual election of officers was conducted after a vigorous campaign by Ed Ricker to be elected President. His campaign was successful and his whole slate slid into office with him at 8:51 P.M. Charlie LeCraw was elected Vice-President and Peter Hale Secretary-Treasurer.

The outgoing officers left a balance in the treasury amounting to $4.87 which is plenty of blood to keep the body alive.

In addition to the political activities, the principal attractions of the evening were presentation of briefs of two theses by students Goodwin and Miller. Goodwin presented a very well illustrated outline of truck movements and delays in the commercial districts of Boston. The conclusion any layman would have drawn would be that any driver was insane to take a trailer into the labyrinth of Boston's markets.

Miller outlined the influence of broadened shoulders on steep uphill grades for truck travel. He showed clearly the benefit of this particular detail of highway design in that it removes the delay and hazard of slow truck movement on upgrades by allowing ample width for other lighter, faster vehicles to maneuver.

The meeting adjourned at 10:00 P.M. until next Fall when an even larger attendance is expected.

PETER P. HALE,
Secretary.

Midwest Section

The Midwest Section held its annual business meeting following dinner at the Chicago Engineers Club on May 13, 1949. New officers elected are:

Matt Sielski—President
Harry Porter—Vice-President
Tom Wiley—Secretary-Treasurer

Arrangements for a "safety conference" (there is some connection with the F & F Outing) to be held at Balsam Lake, Wisconsin, in June were discussed. Following adjournment some of the members indulged in practice with permutations and combinations.

TOM WILEY,
Secretary.

MEMBERSHIP ELECTIONS

MEMBERS

Elected June 1, 1949

EASTMAN, RAYE C.
Planning Director
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City Hall, Ann Arbor, Michigan
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Ann Arbor, Michigan

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LORENTZEN, KAY
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Chicago, Illinois

TAYLOR, ALONZO C.
Principal Highway Engineer
U. S. Public Roads Adm.
Division 2
Washington 25, D. C.

WATERS, CHARLES R.
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Public Works
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Buffalo 2, New York

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SEND MAIL:
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STOCKDALE, WILLIAM K.
Assistant Traffic Engineer
451 City Hall
Spokane, Washington

JUNIORS

FOLWELL, WILLIAM H.
Traffic Technician
Dept. of Traffic & Transportation
3343 Dinner Key Drive
Miami, Florida
SEND MAIL: 1945 N. W., 24th Ct.
Miami 35, Florida

WILCOX, ROSS G.
Traffic Engineer
National Safety Council
20 N. Wacker Drive
Chicago, Ill.

TRANSFERS

ASSOCIATE TO MEMBER

AVINS, NATHAN
FAUSTMAN, D. JACKSON
GOTTSCHALK, WALTER D.
HEAD, J. AL
HOWIE, GEORGE W.

JUNIOR TO MEMBER

DEETZ, RUSSELL S.

JUNIOR TO ASSOCIATE

SHUTTLEWORTH, GERALD E.

REINSTATED AS MEMBER

BECKENBACH, Lt. Colonel C. G.
O-29031
Headquarters 3d Trans. Mil.
Ry Sv, APO 503, c/o Postmaster
San Francisco, California

Pennsylvania: The State Institute of Public Safety says the safest driving age is 45-50.

Sixteen-year olds kill nine times as many people on the highways as those in the safe driving age.

Considering the 15-19 age group, its fatality rate per mile is five times that of the 45-50 age group.

The growing demand for safe drivers schools in public and other schools is predicted on these facts.

Graduation from a safe drivers school should be the first requirement for all new licenses issued to drivers.

Attitudes as to driving practices, law enforcement, court rulings, and training procedure would here be developed to the highest degree.

School Days in Michigan

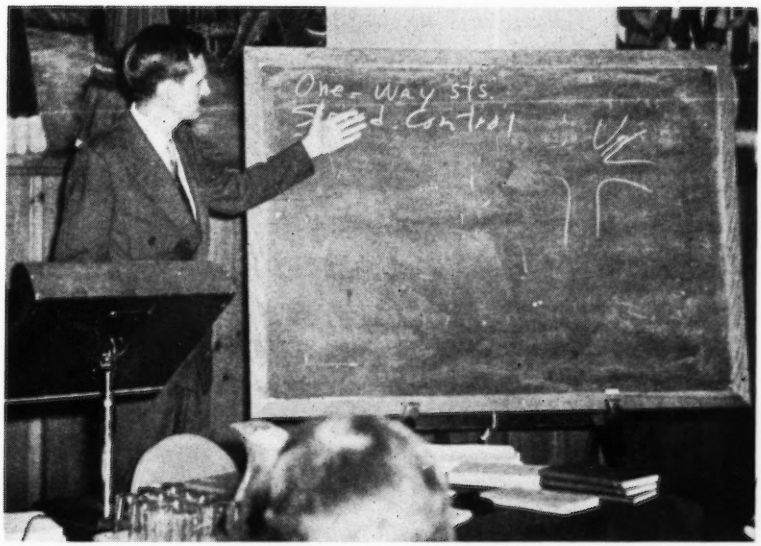
Prexy Al Malo, chairman of the Traffic Engineering Division, Michigan Safety Conference, pounded the table—not having a bell to ring—and the "conference-school" was in full session.

For two days in Detroit, May 19 and 20, Professor Ted Matson and Wilbur Smith threw the book at nearly 200 students—engineers, police, planners, and educators. They had come to enroll from all parts of Michigan—including some from other states.

Fundamentals of signal timing, use of signs, application of markings, increasing road capacity, channelizing intersections, and regulating parking were thoroughly expounded in the highly concentrated program. The students loved it—at least none played "hookey" and all took the final exam. No grades were recorded as everyone insisted on grading his own paper.

Seriously, the novel program was a great success. Safety conference delegates participated in the Traffic Engineering Division's program were enthusiastic in their praise of Professors Matson and Smith for their ability to get across in a few hours so much basic information on the science of traffic engineering.

Dean Carl McMonagle, presiding over the second day sessions, found it necessary to ring the gong on further questions, and upon conferring degrees, cum laude, ordered the "conference-school" adjourned.



Wilbur Smith illustrates a point during a lecture at the Traffic Engineering Division of the Michigan Safety Conference.

A portion of the class attending the Traffic Engineering sessions of the Michigan Safety Conference.

Pennsylvania Supreme Court Declares Pennsylvania Parking Authority Law Constitutional

By its decision in the case of McSorley vs. Fitzgerald et al (59 A. 2d 142, May 24, 1948) the Pennsylvania Supreme Court has undoubtedly given encouragement to those advocating establishment of public parking authorities in Pennsylvania and in other states.

The Supreme Court took jurisdiction in the matter when a taxpayer challenged the constitutionality of the enabling act under which the Public Parking Authority of Pittsburgh was set up, (P.L. 458, 53 P.S. Sec. 10271, June 5, 1947) asking that the authority be restrained from exercising the powers granted to it and the city be restrained from appropriating to it any public funds or entering into any agreement with it for the waiver of taxes on its properties. The taxpayer's bill was dismissed.

Under the 1947 parking authority law, cities of the second class are given power to organize parking authorities by adoption of a resolution or ordinance to that effect. The purpose of such an authority is to study public needs in relation to parking and to establish a permanent coordinated system of parking facilities by acquiring, improving, maintaining and operating land and facilities to be used for parking of vehicles. It may charge reasonable rates to provide for construction and upkeep of necessary facilities, but may not provide service facilities. None of its bond obligations are deemed obligations of the Commonwealth. The authority has the power of eminent domain, and property acquired or used by it is tax exempt.

Stop! Help! Stop!

STOP! No more applications for membership on THE RESOLUTIONS COMMITTEE will be accepted. More than nine hundred (900) members and non-members have already joined up.

Some of the nation's most distinguished citizens have volunteered. We quote from the letters of only a few. (Names omitted by request).

"Sign me up for a Chopin prelude, and my own composition 'Whistle While You Eat'."
H———— S. (for nothing) T————

"Let Europe starve; feed the BISCUIT BANTER BUMS."
P——— G——— H——— (Hon.)

"Rather a 3rd World War than no BISCUIT BANTER BREAKFAST," says Mamie.
D———— D. E————

"WILL WITHDRAW CANDIDACY IF BREAKFAST IS CANCELLED STOP ASSIGN ME TO LEAD PART."
WILL BURRESS SMYTH

With this resounding response to the clarion call of service, our original Washington Committee (Hardly Frisky Hammond—any more) can now lean back, relax and enjoy it.

RESOLUTION COMMITTEE

W. E. "Skinny" De Young, Chairman

(This ad is paid for by my employers, bless their souls)

Hawley S. Simpson, Co-Chairman

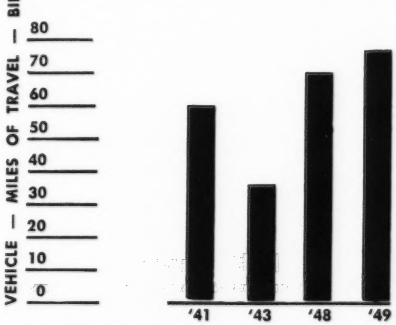
The Supreme Court in its decision went into some detail in refuting plaintiff's first contention, that the purpose of the authority was not public in character, enumerating the reactions for enactment of the law as set forth in the act itself. Stressing the increasing number of private vehicles now using the streets, the legislature declared that the free flow of traffic through the streets of cities of the second class was necessary to the health, safety and general welfare of the public. Because of the parking of motor vehicles on the streets, this free flow of traffic was becoming more and more difficult. Excessive parking impeded fire fighting and the disposition of police forces; it threatened irreparable loss of property valuations. Provision of sufficient off-street parking facilities would reduce this parking crisis, and the establishment of a parking authority would thus promote the public safety, convenience and welfare. The purposes of the parking authority permitted under the enabling act were thus held by the legislature to be public uses for which public money might be spent and private property acquired by the exercise of the power of eminent domain.

(Highway Research Board Correlation Service—Circular No. 52, February 1949. Supplemental item 21-3, Memorandum No. 21, October 1948.)

Presentation made in Governor's chambers, Sacramento, May 19, 1949, of the First Place award, Traffic Engineering Achievement, to California, 1948 winner in Western region.

Reading from left to right: F. B. Crandall, Traffic Engineer, Oregon State Highway Department and member Board of Direction, Institute of Traffic Engineers, presenting the award on behalf of the Institute; C. H. Purcell, Director of Public Works; Governor Earl Warren; J. W. Vickrey, Assistant State Highway Engineer, Planning; George T. McCoy, State Highway Engineer; J. C. Young, Traffic Engineer.

Traffic Trends



TRAVEL ON RURAL ROADS FOR FIRST FIVE MONTHS OF 1941, 1943, 1948 AND 1949.

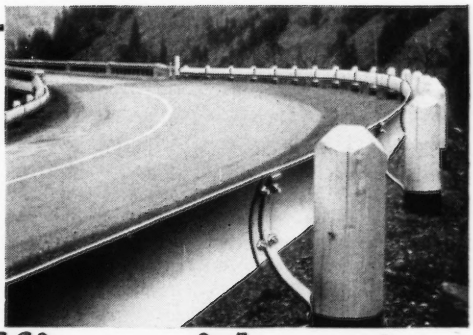
Based on Public Roads Administration Data

Parking Forum

Should All-Nite Parking Be Abolished? was the subject of a recent forum sponsored by the Washington, D. C. Division of the American Automobile Association. The meeting was set up to give the public an opportunity to express their views on local parking problems. Major questions discussed were (1) Should all-night parking be abolished in D. C.?, and (2) Should the District Government provide off-street parking facilities where private enterprise fails to do so? Principal speakers were P. Y. K. Howat, Chairman, Motor Vehicle Parking Agency, and Howard M. Starling, Manager, Washington Office, Association of Casualty and Surety Companies.

Exceeds all state safety specifications

TUTHILL HYWAY GUARD



cuts traffic accidents!

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Super-strong Hyway Guards safely deflect cars and cushion shock to vehicle, occupants and rail. Easily seen by day or night. Speedy, permanent erection with little or no maintenance required.

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OTHER TRAFFIC NEWS

Open Discussion

Wholesale Rural Traffic Counts

The vast majority of traffic engineering activities are associated with high traffic volumes, congestion and vehicle delay. In North Carolina, we are now most active at the opposite end of the traffic volume scale, i.e., on local rural roads.

The voters have just approved the issuance of $200,000,000 in State bonds for use solely in the improvement of secondary rural local roads. This is probably the largest State road bond issue in the history of any State, and is surely the largest for local roads. (In North Carolina, the State has had exclusive local road jurisdiction for 18 years).

The program involves the selection, for hard surfacing of 12,000 miles out of some 46,000 system miles not now hard surfaced. Since traffic volume is expected to receive primary consideration in the selections, our emphasis on rural traffic counts was shifted, last February, from primary and feeder roads to the local non-hard surfaced roads, and coverage was greatly enlarged.

It is believed that we have a greater volume of rural machine counting work, and more intensive coverage than ever attempted by any State. The job is being done by the State-wide Highway Planning Survey in cooperation with the Public Roads Administration.

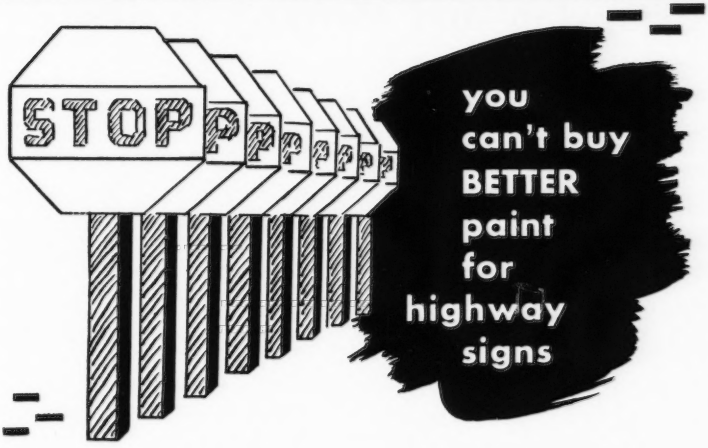
Being now in full operation, we are making 24-hour machine counts at about 3200 rural stations each month, supplemented by 40 8-hour manual classification counts; 32 5-day recorder control station counts, and 20 fixed full time recorders; together with 48 8-hour manual counts at drawbridges and ferries, and many extra counts in special traffic engineering studies. The bulk of the coverage is by 425 K-Hill machines, in connection with Streeter-Amet and other make recorders. Thirteen full time field men, and 5 full time office men, handle the job at a monthly operating cost of about $6500. One 24-hour station count averages about $1.50 in field operating cost.

While it is impossible, even with this expanded program, to cover the entire local system with actual counts, field machine men make "opinion estimates" on the ground for virtually all sections not covered by counts, with the expectation that, by the end of the year, we shall have sufficient data and estimates to enable traffic ratings for virtually every section of every local road in the State.

If any readers know of a more extensive, or intensive, rural count operation, please advise the writer.

James S. Burch (Mem., ITE)
Engineer of Statistics and Planning
State Highway and
Public Works Commission
Raleigh, N. C.

LONG LIFE • HIGH GLOSS



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BY ACTUAL TESTS, a number of states have found NAZ-DAR Silk Screen Enamel FAR SUPERIOR to any other, and are using it with great satisfaction.

IT STANDS THE GAFF! Withstands exposure for indefinite periods . . . dries with a hard and tough surface with a fine glossy finish. Comes in paste form . . . 1 gallon will cover from 900 to 1200 sq. ft.

HEADQUARTERS FOR ALL SILK SCREEN SUPPLIES — colors, silk, squeegees, stencil knives, etc.

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Weaving and Merging Traffic

Ed. Note: Mr. Ralph L. Fisher, Engineer of Design, New Jersey Highway Dept., kindly consented to review for our readers Technical Report No. 4 recently published by the Yale Bureau of Hwy. Traffic. This report is a symposium based on student theses entitled "Studies of Weaving and Merging Traffic" by F. Houston Wynn and Stewart M. Gourlay of the class of '46, and Richard I. Strickland of the class of '47.

A knowledge of the time gap acceptable to motorists for various traffic conditions would assist the designer in determining the type of facility needed.

The three papers presented in Technical Report Number 4 are based on studies of the time gap required in a moving stream of traffic for the intermingling of vehicles from an adjacent stream.

The first paper, "Weaving Practices On One-Way Highways", is based on studies at two locations, one a 4-lane one-way roadway and the other a 3-lane one-way roadway. The author has divided weaves into their basic types and analyzed the length of weaves, amount of lateral movement, and spacing and speeds of vehicles.

The second paper, "Merging Trafffic Characteristics Applied to Acceleration Lane Design", is concerned with merging traffic for two conditions: (1) where entering traffic is controlled by a stop sign, and (2) where it is allowed to enter without stopping.

As the author states, most highway engineers believe acceleration lanes to be desirable, but there is considerable difference of opinion concerning their economic justification.

This paper shows that approximately twice as large a time gap is needed to merge from stop sign conditions as from moving conditions at speeds of 15 to 40 m.p.h.

We can derive from this analysis that, for conditions of heavy traffic volumes or high speeds, the design should be such that merging traffic movements are not stopped but are enabled to merge freely through the use of adequate acceleration lanes. Further research is needed on the merging characteristics of traffic streams of different volumes and patterns, and the effect of various angles of merging, length of acceleration or merging lanes, sight distance and grades. This information would enable the designer to predict the delays and hazards due to merging under different traffic conditions and would aid him in deciding the type of entrance facility required.

It is a moot question if any useful purpose is served by merging or acceleration lanes that require some drivers to stop or make a considerable reduction in speed.

At facilities where the entrance lane joins the main roadway with a sharp radius curve and with a short merging lane, the motorist is given the feeling of entering from a normal stop street and the same attitude is taken by the through traffic, who do not yield the right-of-way. As a result, many entering drivers will have to, or do stop, or enter at very low speeds. This speed differential can create considerable hazard and traffic friction.

Traffic operation on an entrance lane designed with a long flat taper is entirely different. This type of design gives the entering motorist the right-of-way and it is the through traffic that makes the necessary adjustments for the entering traffic.

The third paper, "A Study of Merging Vehicular Traffic Movements", is concerned with merging traffic at an

talk about original

You're looking at the inventor of parking meters.
You're looking at the *first and original* parking meter.

The idea of metered parking was conceived by the late Carl C. Magee, first president of this company, in 1935. This hand-made model was built under his personal supervision and was named Park-O-Meter, as shown in this photograph. Later, this meter was one of those used in the world's first installation in 1935.

PARK-O-METER

is our *sixth and ultra-modern model* . . . designed and produced by the original and oldest organization in the business, the people with 15 years of parking meter *know-how!*

CONVERTIBLE MODEL G

OVER 600 CITIES KNOW WE KNOW HOW!

urban traffic rotary. The time gap requirements for merging from a stop and from urban speeds agree in general with the findings of the second paper. However, there was some indication that, at a flat angle, approximately three times as large a time gap is needed to merge from stop conditions than for merging at speeds of 15 to 30 m.p.h.

In conclusion, while it is axiomatic that design should be based on factual data, it is doubtful if it can ever be placed *entirely* on a purely mathematical basis. Results of studies such as this can be combined with good judgment and experience on previous installations of a similar nature.

The three authors are to be congratulated for their contribution to the field of highway design.

It is hoped that these studies will be continued and that the three papers will stimulate interest in additional research.

LOOKING AHEAD

September 6-16 — NEW HAVEN, CONNECTICUT
Yale University Institute for Traffic Training. Yale University—Traffic Engineering Course, September 12-16. T. M. Matson, Director, Bureau of Highway Traffic, Strathcona Hall, Yale University, New Haven 11, Connecticut.

September 11-15—DALLAS, TEXAS
57th Annual Conference, International Association of Chiefs of Police. Baker Hotel—Executive Secretary, IACP, 1424 K Street, N.W., Washington 5, D. C.

September 18-21—KANSAS CITY, MISSOURI
55th Public Works Congress, Municipal Auditorium. Executive Director, American Public Works Association, 1313 E. 60th Street, Chicago, Illinois.

September 19-23—FRENCH LICK, INDIANA
Illuminating Engineering Society—National Technical Conference. Executive Secretary, 51 Madison Avenue, New York 10, N. Y.

September 21-24—OKLAHOMA CITY, OKLAHOMA
American Association of Motor Vehicle, Administration, Biltmore Hotel. Executive Secretary, 910 17th Street, N. W., Washington 6, D. C.

September 25-28 — WASHINGTON, D. C.
20th Annual Meeting Institute of Traffic Engineers. Wardman Park Hotel—Executive Secretary, Strathcona Hall, New Haven 11, Conn.

October 2-5—ATLANTIC CITY, N. J.
American Transit Association, Annual Convention. Hotel Traymore. Executive Manager, 292 Madison Avenue, New York 17, New York.

October 2-6—BOSTON, MASS.
American Society of Planning Officials, Statler Hotel. Executive Director, 1313 E. 60th Street, Chicago, Illinois.

October 10-12—CLEVELAND, OHIO
American Society of Planning Officials, Statler Hotel. Executive Secretary, 1313 East 60th Street, Chicago, Illinois.

October 10-13—PITTSBURGH, PA.
International Municipal Signal Association. Annual Meeting. Secretary, 11 W. 42nd Street, New York 18, New York.

October 10-14 — SAN ANTONIO, TEXAS
American Association of State Highway Officials, 35th Annual Meeting. Executive Secretary, 1220 National Press Building, Washington 4, D. C.

when life and money are the measure—

THERE IS NO SUBSTITUTE FOR EFFECTIVE SAFETY SIGNS

Can you maintain real safety on your highways with "out-of-place" materials that merely color the background of Warning Signs — and confuse the message? The warning should be so readable at safe reacting distances that motorists will see it, understand it and obey it! Only a sharp, strong ***message*** will accomplish this purpose — ***reflectorized*** with Grotelite Prismatic Reflectors. They are available now for signs made locally, or complete with New Grote Safety Signs.

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President's Highway Safety Conference

Weak spots in application of the Action Program of the President's Highway Conference were the focus of attention at the third national Conference held in Washington. Although major changes in the Action Program itself were few, the entire program was closely scrutinized and strengthened by the more than 2,500 participating public officials and civic leaders from all states and many cities.

All state and local officials concerned with traffic safety were represented, including state and local highway officials, motor vehicle administrators, enforcement executives, educators, and business and industrial leaders.

The fundamental soundness of the Action Program was shown by the fact that close review of hearings conducted by Conference Committees produced relatively few changes. Most of these were made in the light of experience since 1946 and in bringing factual data up to date.

With Thomas H. MacDonald, Commissioner, Public Roads Administration, presiding, the Conference approved all reports and recommendations submitted by the Committees. Revisions to the Engineering Report are briefly as follows: It was recommended that highway departments be vested with authority to establish ingress and egress on parkways and controlled access highways, and that such authority to be effective should be deemed inviolate so that changes by special legislative acts will not be made contrary to the highway design.

Another recommendation calls for further scientific study of polaroid headlights for motor vehicles. It was also agreed that the Action Program should be amended to show that progress in automotive engineering and design is constantly being made and will continue to be made.

In many states, railroad grade separations are built on new right-of-ways adjacent to the old crossings which remain unclosed because of lack of legal authority or divided authority. To help overcome this problem, action was taken by the Committee on Engineering to draft model legislation which would facilitate closing of crossings.

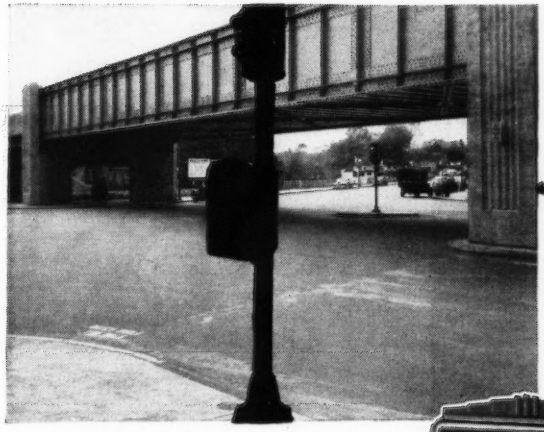
Traffic Accident Involvement

A statement on the probability of traffic accident involvement by drivers of different age groups will be possible on the completion of a survey of state accident statistics now being conducted by the Center for Safety Education of New York University. A report of a study in cooperation with the Connecticut Motor Vehicle Department entitled, "A Study of Traffic-Accident Involvement" recently released by the Safety Center shows that Connecticut drivers between the ages of 18 and 27 are "over involved" in traffic accidents. Drivers in their early twenties appear to be the most serious offenders. The figures show that the tendency for greater involvement in fatal accidents reaches a peak at age 20.

The chart presents an "age-accident involvement index" as a measure of the experience of each age group. This method of presentation reflects the basic step in the investigation of the age-accident problem as developed by the Safety Center, according to Dr. Stack, Director. The index is a ratio of the percentage of accident-involved drivers in a specific age group and the percentage of the total licensed drivers

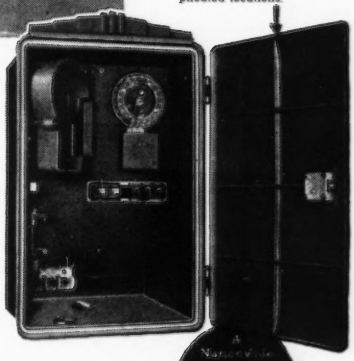
SAFE traffic control

requires the RIGHT controller for every intersection



Installation of Crouse-Hinds Type GS Controller at a five-way intersection

Crouse-Hinds Type GS-4 Controllers with their Crouse-Hinds time-keeping synchronous motors will keep in step with each other at adjacent intersections. Their multiple-circuit cam units make them capable of efficiently controlling the flow of traffic at complicated locations.



A controller that is adequate for one intersection may be unsuitable for use at another. Modern traffic engineering demands a great variety of controllers. You will find the RIGHT controller to meet any traffic requirement in

CROUSE-HINDS complete line

It includes every type that is necessary to handle any traffic problem .... from a simple non-interconnected installation to full progressive systems employing multi-circuit controllers.

Full details and complete listings are in Crouse-Hinds Catalog 226, along with a full line of traffic signals, beacons, and flashers. Send for your copy.

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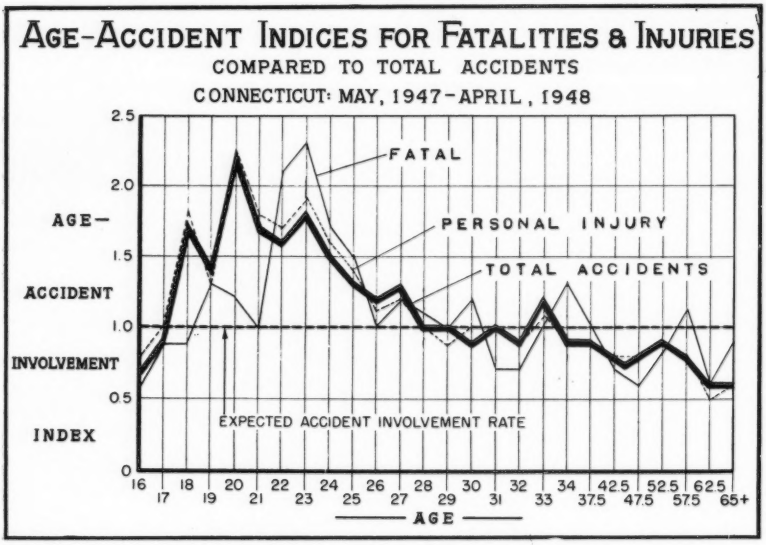


in the same age group. For example, if the 20-year old group represents 1.63% of the licensed drivers in the state and was involved in 3.56% of accidents, the index would be 3.56 divided by 1.63 or 2.2 as shown on the figure.

Dr. Stack indicated that the Safety Center was hopeful of completing similar studies in cooperation with other states throughout the country so that comparisons could be made between states and an adequate sample of the national age-accident factor could be obtained.

Results of this study are expected to have great influence on all agencies interested in accident prevention. The matter of limiting liability coverage of certain age groups may be adjusted as a result of Dr. Stack's work.

During the period covered by the investigation, 739,187 drivers were licensed in Connecticut. In the study of these records a carefully controlled sample of 4,000 cases was selected for the development of the indices. The report on the Connecticut Study just released by the Safety Center and entitled, "A Study of Traffic-Accident Involvement", presents in detail the statistical procedures in taking the sample and in determining the adequacy and accuracy of the sample method.

Canal Street between the Holland Tunnel and the Manhattan Bridge to Brooklyn between 4 and 5 P.M. carries mixed traffic —35% being buses and trucks. The total number of vehicles per lane per hour is 980, and there is great congestion. The average speed of traffic is 10 miles per hour. It was apparent that this slowing up was due to mixed traffic.

Convention to Draw Record Gathering

"Thirty days hath September . . .," but the 25th to the 28th are the ones you will remember!

That is the key line in a colorful announcement which has been sent to all ITE members, reminding them of the top quality feature program planned for the 1949 ITE 20th Annual Convention in Washington, D. C., September 25-28.

If you haven't made your plans to go, don't hesitate another day! Make your reservations direct with the management of the Wardman Park Hotel which will provide the colorful setting for this never-to-be-forgotten gathering in the nation's capital.

Inasmuch as this is the first time since 1932 ITE has gathered in Washington, those participating are assured of a four-day star-studded, eventful program.

In addition to the usual ITE professional and business sessions, take a look at the following list of special events during the convention:

LUNCHEON FOR LADIES
Monday Noon
September 26
Shoreham Hotel

RECEPTION AND BUFFET SUPPER
Tuesday, September 27
7:00 P.M.
Continental Ballroom

BISCUIT BANTER BREAKFAST
Monday, September 26
8:00 A.M.
Burgundy Room

LADIES TRIP TO MOUNT VERNON
Tuesday, September 27
10:00 A.M.
Mount Vernon Tea House

MEN'S FIELD TRIP
Wednesday, September 28
1:30 to 4:00 P.M.

The Washington Committee of Arrangements, headed by LeVerne Johnson, Chairman, is going "all out" to be sure that every detail of these special events will be to your liking.

The men's field trip on Wednesday afternoon will feature such outstanding new facilities as the new DuPont Circle underpass and the Whitehurst Elevated Highway. Present plans are that technical sessions Wednesday morning will be devoted largely to explanation of features to be seen during the afternoon trip.

The Biscuit Banter Breakfast featuring DeYoung-Simpson and Company plus special stars from Washington will be better than ever.

For the ladies, there will be a luncheon at the swank Louis Seize Suite at the Shoreham Hotel. There will also be a free field trip for the ladies to Mount Vernon, and we understand a luncheon has been scheduled at the Mount Vernon Tea House.

Instead of the usual banquet the committee has arranged this year to have a reception and buffet supper on Tuesday evening in the newly decorated Continental Ballroom at the Wardman Park Hotel. The "bull session" room, more politely known as the Headquarters room, will be in the Madison Suite. This will be headquarters for convivial gatherings for fellows that you see but once a year and would like to know better, and where much of the informal business of the convention will be handled.

Check with the Registration Desk for information on "sight-seeing". Informal sight-seeing trips in private cars will be arranged by the Washington wives.

Meet me in Washington September 25-28.

—Sub-Committee on Publicity

TENTATIVE PROGRAM

Twentieth Annual Meeting

INSTITUTE OF TRAFFIC ENGINEERS

SEPTEMBER 25-28, 1949

WARDMAN PARK HOTEL,

WASHINGTON, D. C.

SUNDAY, SEPTEMBER 25th

10:00 A.M.—BOARD OF DIRECTION MEETING

12:00 Noon—BUSINESS MEETING OF STANDING COMMITTEES (Upon call of chairman)

2:00 P.M.—REGISTRATION

4:00 P.M.—ANNUAL BUSINESS MEETING

6:00 P.M.—ADJOURNMENT

MONDAY, SEPTEMBER 26th

7:30 A.M.—REGISTRATION

8:00 A.M.—BISCUIT BANTER BREAKFAST—Conducted under the auspices of the Resolutions Committee—W. E. "Skinny" DeYoung, Chairman.

10:00 A.M.—TECHNICAL SESSION NO. 1

WELCOME TO DELEGATES—Lieutenant Colonel Cox, Acting Engineer Commissioner, District of Columbia.

10:15 A.M.—RESPONSE, PRESIDENT, ITE

10:30 A.M.—TRAFFIC ENGINEERING IN HIGHWAY ADMINISTRATION—Thomas H. MacDonald, Commissioner of Public Roads.

11:00 A.M.—INTERNATIONAL ASPECTS OF HIGHWAY TRAVEL—H. H. Kelly, Assistant Director, Office of Transportation and Communications, Department of State.

11:30 A.M.—DEVELOPING PUBLIC SUPPORT FOR HIGHWAY IMPROVEMENT PROGRAM—J. Ben Critz, Vice-President and General Manager, Chamber of Commerce, Dallas, Texas.

12:00 Noon—ADJOURNMENT

2:00 P.M.—TECHNICAL SESSION NO. 2

RECENT CHANGES IN TRAFFIC ENGINEERING ORGANIZATION—Panel Members:

T. T. Wiley, Director, Dept. of Traffic Engineering, New York City.

J. E. Havenner, Manager, Public Safety Dept., Auto Club of Southern California; Member, Traffic Survey Committee, City of Los Angeles.

Dwight T. Myers, Traffic Engineer, City of Providence.
James T. White, Traffic Engineer, City of Evansville, Indiana.

4:00 P.M.—STATE-CITY RELATIONS IN TRAFFIC ADMINISTRATION —Norman Hebden, Research Associate, Bureau of Highway Traffic, Yale University.

4:30 P.M.—DETERMINANTS IN ANNUAL TRAFFIC SAFETY AWARD AND ITE AWARD FOR EXCELLENCE IN TRAFFIC ENGINEERING—Harry Porter, Jr., Traffic Engineer, National Safety Council.

5:00 P.M.—ADJOURNMENT

TUESDAY, SEPTEMBER 27th

10:00 A.M.—TECHNICAL SESSION NO. 3
A TRAFFIC-ACTUATED CYCLE AND OFF-SET SELECTOR SYSTEM—John L. Barker, Asst. Chief Engineer, Automatic Signal Division.

10:30 A.M.—REVERSING FLOW IN CENTER LANE OF 3-LANE ROADS —Melville M. Todd, Assoc. Traffic Engineer, Virginia Department of Highways.

11:00 A.M.—TIME-SPACE RELATIONSHIP OF TRAFFIC MOVEMENT AT "STOP" INTERSECTIONS—Morton S. Raff.

11:30 A.M.—CONTROL OF TRAFFIC FLOW AT DRIVE-IN THEATERS —J. E. Johnston, Traffic Engineer, Nebraska Dept. of Roads and Irrigation.

12:00 Noon—ADJOURNMENT

2:00 P.M.—TECHNICAL SESSION NO. 4
PARKING METERS AS AN AID TO ENFORCEMENT—John H. Mitton, Traffic Engineer, Dept. of Vehicles and Traffic, Washington, D. C.

2:30 P.M.—SOME APPROACHES TO THE DOWNTOWN CONGESTION PROBLEM—Panel Members:

PARKING FOR THE DOWNTOWN AREA—Donald M. McNeil, Traffic Engineer, Bureau of Traffic Planning, Pittsburgh, Pa.

DESIGNING THE DEPARTMENT STORE FOR THE AUTOMOBILE CUSTOMERS—Speaker to be Announced later.

MOVING THE TRAFFIC GENERATORS FROM DOWNTOWN TO THE COUNTRY—Huston Rawls, National Suburban Centers, Inc.

PARKING SPACE THROUGH ZONING—David R. Levin, Chief, Land Studies Section, Public Roads Administration.

5:00 P.M.—ADJOURNMENT

7:00 P.M.—RECEPTION

8:00 P.M.—ANNUAL DINNER (Buffet Style)

WEDNESDAY, SEPTEMBER 28th

10:00 A.M.—TECHNICAL SESSION NO. 5

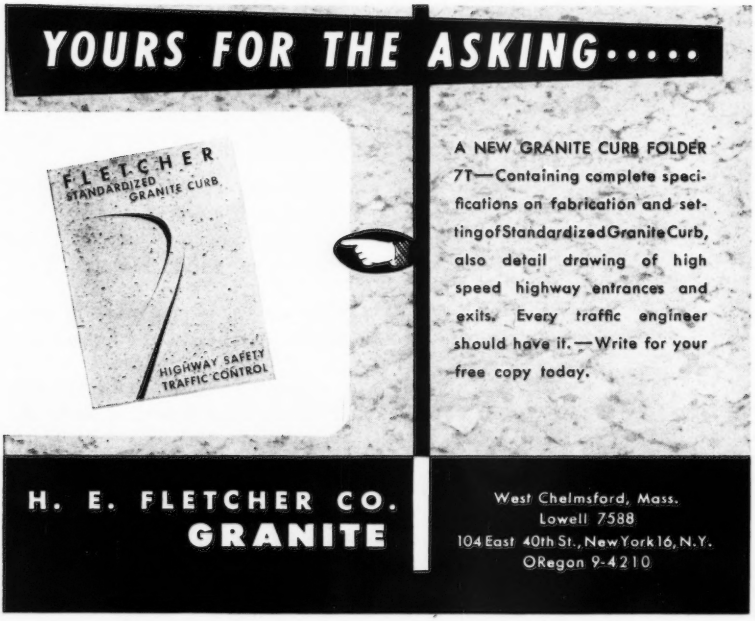
Discussion of features to be covered on field trip, including:

Pentagon Network
Dupont Circle Underpass
K Street Viaduct (Whitehurst Freeway)
14th Street Bridge
Multiphase signal operation in a coordinated system
Channelization at complex intersections

12:00 Noon—ADJOURNMENT

1:30 P.M.—FIELD TRIP

4:00 P.M.—ADJOURNMENT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Signs of the Times

by LAMAR W. GARDNER *(Assoc. Mem., ITE)**

A striking comparison illustrating the advance in signing practices to serve the needs of present-day traffic with its higher speeds, greater volumes, and multiple lanes, is shown in the photograph.

The picture was taken on a recently completed section of the Santa Ana Parkway. The small sign below the

new installation was generally standard on our parkways at the time the Santa Ana Parkway was constructed. It has letters four inches high and is first legible at a point about 175 feet away, with, however, only about 60 feet of this distance available between the approaching car and the asphalt dividing point. At 45 m.p.h., the average speed on urban parkways, the driver would have 0.9 seconds in which to read the sign, react, and find a space in which to accomplish the weaving into the turning lane. For a 60 m.p.h. design speed, this time would be reduced to only 0.7 seconds. All investigations of signing requirements have found this short notice in time practically useless for the speed, volume, and multiple laning of expressways.

The large sign has lower case letters 10 inches high and upper case letters 16 inches high, and is first legible with average vision about 450 feet from the asphalt division point. This

***Engineer, Street and Parkway Design Division, Bureau of Engineering, City of Los Angeles.**

gives the driver 6.9 seconds notice at the average speed of 45 m.p.h., and 5.2 seconds at 60 m.p.m.

According to the Pentagon Building (Wash., D. C.) road network studies, 5 to 10 seconds of legibility distance from the directional sign is needed for vehicles traveling at average or design speeds. In the same study a legibility distance of 50 feet for each inch of letter height, and letter heights of from 1½ inches to 2 inches per 10 m.p.h. were quoted as a rule-of-thumb guide. The revised Manual on Uniform Traffic Control Devices, August 1, 1948, gives no criteria for destination signing on urban express highways, but does state that "in rural districts on major routes" destination signs "shall have letters at least 6 inches in height" and "on less important rural roads and in *urban areas* the signs shall have letters at least 4 inches high." It further states that "the sign dimensions shown in this Manual are to be regarded as the minimum standards. Increases above this minimum are permissible and desirable where investigation has shown that a larger sign is needed for adequate emphasis. However, oversize signs should be used sparingly, in order not to weaken the effect of smaller signs."

An analyst of the Brookings Institute reporting on the "highway transportation dollar" recommended: (1) Better use of existing highway facilities and sources of revenue already available, declaring 'better highway administration and more effective traffic engineering techniques are badly needed'; (2) 'A better balance between expenditures for automobiles and those for roads.

A survey of signing on many of our express highway facilities in the United States will show that the need for "adequate emphasis" has been expressed in sign letters from 8 to 16 inches high. The Pentagon Building studies rule-of-thumb would give a legibility distance of 500 feet for the 10-inch letters, and a design speed of 50 m.p.h. for 5 seconds notice. These and other distances quoted above are for daylight legibility. The old small signs were illuminated solely by the vehicle headlights, but the new overhead signs are illuminated at night by flourescent lighting.

When traveling over the new Santa Ana Parkway one is vastly impressed by the smoothness of traffic flow imparted by the new signs, not only to the stranger-driver, but also to those driving the parkway daily. Warning signs are posted one-quarter mile before the actual dividing point, thus giving straight-through drivers the opportunity of moving into the two left-hand lanes, leaving the third lane to the right for those turning off. Drivers in the two left lanes, desiring to turn off, have one-quarter mile in which to weave to the third lane and prepare to take the decelerating lane to the turnout point.

A psychological study of driver reaction to adequate signing would probably show a value in safe and efficient highway operation much greater than admitted by many highway engineers today. The "forget" value of signs is undoubtedly of greater effect in the smooth and orderly flow of traffic. Due to the uniformity of surface features of a parkway, the daily driver is apt to be uncertain of the proximity of points of traffic friction at times. The high, boldly visible signs serve at a glance to give him prior warning of his location and give a certainty to his driver behavior that otherwise would be lacking. In "Highway Practice in the

United States" by the Public Roads Administration, 1949, it is stated that "though signs, signals and markings are in a strict sense relatively minor appurtenances to a highway, they often have a profound effect on traffic movement and consequently should always be integrated with highway design considerations."

It would further seem that if "oversize" signs are needed for another parkway, they would be just as much needed on outlying highways of lower design standards where comparable speeds, volumes, and multiple-laning occur. Perhaps we should design boldly to the need for larger signing rather than to protect and justify the many small and ineffectual signs which now exist.

Traffic Light, Mental Giant

San Francisco has a traffic light with a memory.

The signal is claimed by city officials to be the most intellectual traffic light anywhere according to the American Public Works Association.

It is part of San Francisco's new system of "robot cops" designed to provide electric traffic control that varies automatically to meet the particular needs of different traffic situations at different hours.

Undoubtedly the mechanical mental giant of them all is an uncanny but ordinary looking electric signal controlling one of the several ramps leading away from the huge San Francisco-Oakland Bay Bridge.

Though the light caters to the demands of heavy traffic on the ramp, it "remembers" a lone car waiting on a side street to cross, and gives it the green as soon as there is a few seconds lull in the bridge traffic. Furthermore, the light can anticipate just when a sufficient lull is going to occur.

It works this way: Magnetic detectors beneath the pavement pick up impulses from the steel in passing cars. When the impulses build up a certain potential, the right of way is given to traffic on the ramp. Impulses from one or more cars on the street crossing the ramp are remembered until the main traffic thins.

Transit Awards

Seven bus and streetcar companies throughout the United States won first honors recently from the American Transit Association for outstanding passenger and traffic safety records during 1948.

At a ceremony in Philadelphia, silver plaques, signifying top performance last year in accident prevention, were presented to the following population group winners:

St. Louis Public Service Co. (Group I—600,000 or more urban population); New Orleans Public Service, Inc., and Seattle Transit System (joint winners in Group II—250,000 to 600,000 urban population); Evansville City Coach Lines, Evansville, Ind., and South Carolina Electric & Gas Co., Columbia, S. C., (co-winners of Group III—100,000 to 250,000).

Springfield City Lines, Springfield, Ohio, (Group IV—30,000 to 100,000); and A. B. & W. Transit Co., Alexandria, Va., (Group V—serving urban and suburban populations of more than 30,000).

It was the fourth consecutive award for South Carolina Electric & Gas Co., Evansville City Coach Lines and Springfield City Lines. The Seattle, New Orleans and Alexandria companies received their third consecutive awards.

A Technique for Summarizing Data on Conflicts of Right-of-Way

by ROBERT F. UTTER *(1) and* HUGH M. GILLMAN *(2)*

Ed. Note: The technique herein described was developed as an incidental part of a doctoral thesis in psychology and of a research project of the Institute of Transportation and Traffic Engineering of the University of California, Los Angeles. Personnel and equipment were furnished by the City of Los Angeles through the cooperation of Ralph T. Dorsey, Principal Street Traffic Engineer.

In the course of a study of the effects of painted crosswalks the authors had occasion to develop a technique for observing, recording and presenting data pertaining to conflicts of right-of-way between pedestrians and automibile drivers. It is believed that the technique might be of interest to persons in traffic engineering.

The problem involved location of the respective positions, by lanes, of pedestrians and drivers at the time of conflict. The original field recording sheets are not presented here because they were also used to obtain other information not pertinent to the subject of this article. That portion of the sheet which will be described consisted of a series of four columns. Each column represented a lane. By placing the letter "V" for vehicle in the appropriate column and a letter "P" to represent the pedestrian's position, the conflict situation could be quickly noted. Actually a series of three such columnar set-ups were used to separate the types of observed behavior. These three were respectively "Driver Yielded Right-of-Way", "Driver Failed to Yield Right-of-Way" and "Pedestrian Preempted Right-of-Way". In this way it was possible to maintain a running record in abbreviated form of the observed behavior.

The problem of summarizing data on conflicts from a number of intersections was solved by the use of a sixteen-fold table. In such a table there are four rows and four columns. The columns were used to denote positions of vehicle while the rows denoted the location of pedestrians. Such a table would then appear as follows:

Pedestrian in Lane	Vehicle in Lane 1	2	3	4
1		×		
2				
3				
4				

Thus if a violation occurred when the pedestrian was in lane 1 while the vehicle was in lane 2 a figure would

(1) Now Assistant Professor of Psychology at the University of New Mexico.

(2) Traffic Engineering Assistant, Department of Traffic Engineering, City of Los Angeles.

appear in the cell indicated by the letter X. Such tables prepared from field data were very useful in the analysis of reaction patterns.

Although the computations were not carried out, this type of table would easily lend itself to statistical manipulation. For instance, the statistic "Chi Square" could be used to determine if the observed cell values deviated from theoretical or expected values. Thus if an investigator wished to determine if conflicts were directly proportional to lane volume he could take the observed values and redistribute the number of cases proportionally to the respective lane volumes and then test the discrepancies between the expected (computed) values and the actual values obtained. The mechanics of the Chi Square technique are readily available in textbooks on statistics.

Modern Zoning Ordinance

The new proposed zoning ordinance for the City of Minneapolis recently published is thoroughly modern. Automobile parking space is made mandatory for all new construction or new additions to old buildings in the city.

Permanently maintained parking space on the same lot with the main building is required for every new dwelling unit in residence districts or in the three apartment house districts.

For church, high school, college, and other places of assembly, and for theatres, auditoriums, stadiums, and similar places, there must be at least one parking space for every ten seats in the structure.

For hospitals and welfare institutions, at least one parking space for every 1,000 sq. ft. of floor area in the buildings.

For hotels, apartment hotels, and clubs, at least one parking space for each of the first twenty individual guest suites, and one additional parking space for every four guest suites in excess of twenty but not exceeding forty, and one additional parking space for every six suites in excess of forty.

For business or commercial buildings or structures having a floor area of 5,000 sq. ft. or more, there must be at least one parking space for every 1,000 sq. ft. of gross floor area excluding the basement and automobile parking space.

Parking spaces shall be on the same lot with the main building or located not more than 700 feet therefrom.

Loading spaces must be provided as follows: Every hospital, institution, hotel, commercial or industrial building, or multiple dwelling three stories or more in height or containing more than ten dwelling units wherever erected or established shall have one permanently maintained loading space of not less than ten feet in width, 25 feet in length and 14 feet in height if covered, upon the lot upon which such building is situated for every 20,000 sq. ft. or fraction thereof of gross floor area or for every 20,000 square feet or fraction thereof of land used.

Loading spaces must be provided for land, buildings, or structures used for manufacturing, storage warehouse, goods display, department store, wholesale house, market, hotel, hospital, laundry, dry cleaning plant, or similar uses involving the receiving or distribution of materials or merchandise by vehicles.

Spaces for public parking areas shall be paved with asphalt or concrete surfacing, have bumper guards, be enclosed with an ornamental fence, wall or hedge, must observe the front yard, or corner lot set backs for the district, and these yards must be landscaped.

Association Appoints Field Representative

Moving forward with its nationwide program of traffic accident prevention, the Association of Casualty and Surety Companies has announced the appointment of a field representative to be assigned to the Chicago office according to a statement by J. Dewey Dorsett, General Manager of the Association. Emerson H. Westwick, Director of Safety, Pennsylvania Automotive Association, Harrisburg, has been appointed to the position.

Mr. Dorsett stated that this appointment is in further recognition of the importance of stimulating "action" for traffic safety on the local level. The Association of Casualty and Surety Companies is contributing its full measure to formulating public support in favor of accident prevention programs by organizing state level accident prevention committees comprising membership on the part of member company resident managers.

It is the mission of these committees to further develop accident prevention programs of the Association, cooperate actively with all properly organized traffic safety movements and to provide leadership for a similar program being developed by the National Association of Insurance Agents.

Seven accident prevention committees have already been organized and are now functioning. These are located in the states of Georgia, Illinois, Indiana, Michigan, Eastern Pennsylvania-Southern New Jersey, Western Pennsylvania and Wisconsin.

Mr. Westwick assumed his new duties March 1st and is working closely with the accident prevention committees of the Association in the middle western states. He has been assigned to the Association Chicago office situated at 10 South LaSalle Street.

Mr. Westwick is available to assist with program promotion of committees in Illinois, Wisconsin, Michigan, and Indiana, as well as other committees which may be organized in the future for the mid-western states.

Lighting Might Save 12,000 Lives Per Year

Eighteen thousand four hundred persons were killed and 640,070 injured in the nation's 1948 traffic accidents after dark, The Street and Traffic Safety Lighting Bureau has disclosed.

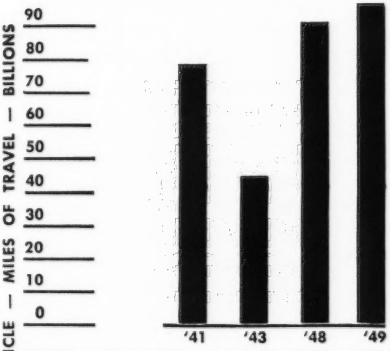
Absence of adequate illumination to permit safe visibility is a major cause of the high dark-hour fatality rate, the bureau claims. It disclosed that the provision of adequate light has reduced dark-hour fatalities an average of 72 per cent in 12 cities. The Bureau also disclosed that the relighting of 113 miles of highway in one state reduced night fatalities 76 per cent.

On the basis of these achieved results, and considering the fact that night traffic is only a third of daylight, the bureau estimates that night fatalities might be reduced as much as 70 per cent by modernizing lighting on heavily-traveled business and residential thoroughfares, bad intersections, main highway approaches to cities and towns, bridge approaches, railroad crossings, hidden curves and other hazardous locations.

This would mean a saving of 12,880 lives per year.

The 1948 night death toll exceeded daylight by 4,600, or 25 per cent, despite the facts that night traffic was only one-third as heavy as daylight, that night accidents were 37 per cent less numerous and that night non-fatal injury accidents were 27 fewer, the Bureau's statement said.

Traffic Trends



TRAVEL ON RURAL ROADS FOR FIRST SIX MONTHS OF 1941, 1943, 1948 AND 1949.

Based on Public Roads Administration Data

Couple Will Fly Helicopter Daily To Miss Traffic

Pity the poor motorist who crawls to work in the mornings and back home again at nights through Houston's heavy traffic.

Envy Mr. and Mrs. J. D. Reed, who will shuttle to and from their work in a helicopter.

The Reeds live at the Shamrock and have an airplane sales agency at the Municipal Airport.

In the mornings, beginning Friday, when they get ready to go to work they'll simply step in the helicopter in front of the hotel and whisk away to the airport.

For awhile, they'll have a pilot to fly them, but Mrs. Reed, a veteran airplane pilot, is taking lessons in flying the helicopter and she plans to be doing the hotel-to-airport hop herself soon.

Minneapolis Plans For Loop Parking Decks

Construction of open-sided, ramp-type parking decks in the heart of the Minneapolis loop was recommended recently as the only way to solve the parking problem for shoppers.

The recommendation was made by National Garages, Inc., Detroit firm which has been conducting a survey of the city's parking problems since last September at the request of the city council.

It was made to a special committee headed by Alderman Frank Moulton, and make up of Ralph Sprungman (Mem. ITE), city traffic engineer; Hugo Erickson, city engineer; Herman Olson, city planning engineer, and I. S. Shattuck (Mem. ITE), traffic consultant for the Chamber of Commerce.

The report said the most pressing problem is to find a way to handle "shopping parkers."

"Errand parkers" already are comparatively well taken care of through parking meters, while fair facilities are available on the edge of the loop for all-day parkers, the survey determined.

As the first step, the report suggested the city take over a site on Sixth Street, opposite the Dyckman Hotel, between Nicollet and Hennepin Avenues. This was designated as Site A.

Here, a parking deck to hold 600

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cars could be constructed at an estimated cost of $1,777,700, with carrying charges of $75,550 a year. Part of the initial cost would be taking over present buildings on the site.

Such a parking deck should handle 500,000 cars a year and earn $316,000 in gross revenue, the report said.

This would leave a net operating cost of $120,000, or a net increased income to the city, after present taxes are deducted, of $22,168, the report added.

While acquisition of this site was suggested as the most urgent, the survey group also recommended three other sites in the loop. These, it said, either should be earmarked for future development or be worked into an alternate plan.

The report recommended the multi-level parking deck type of construction, with ramp approaches, as best suited to the city's needs.

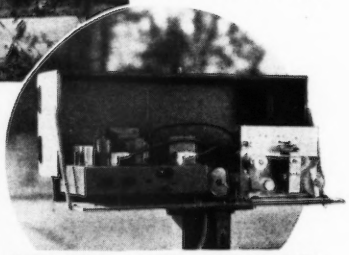
Parking lots were dismissed as too costly and inefficient. Storage garages were described as too expensive.

The "mechanical garage", with hoists instead of ramps, also was considered too expensive, with the 30% increase in capacity more than offset by the added cost, "usually two or three times as expensive per square foot."

Minnesota climate, the report said, is no argument against the ramp-type parking decks. Such type of construction can be built for between $650 and $1,000 per car and can handle one car for every 250 square feet of floor area, it claimed.

NEW PERMANENT STATION TRAFICOUNTER

Below: Counter Open



Here is the improved Permanent Station Traficounter—the latest in the line of Traficounters Streeter-Amet has developed over a period of many years. All highway departments who have relied on Streeter-Amet for help in their traffic problems will appreciate the many advantages of this new Traficounter.

The detection is not affected by any weather—snow or ice. It is designed especially to eliminate rubber tubes or treadles. It detects vehicles at high or low density of traffic.

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ITE NEWS AND PERSONALS

Secretary's Column

Members of the Institute have, for some time, been urging the Board of Direction to review the existing contract, relative to publication of the revised "Traffic Engineering Handbook", for possible changes. This attitude on the part of some members is the direct result of the decision of the Association of Casualty and Surety Companies to eliminate the National Conservation Bureau title in favor of the present departmental name. It is the general feeling of these practicing traffic engineers that uninformed buyers of the revised edition will misinterpret the insurance label on a technical engineering publication. It is also the feeling of some members that publication of the revised edition, as a joint enterprise, would indicate that the Institute has not yet "come of age" and must still lean heavily for support on other organizations for important projects of this nature.

Because of this pressure from members-at-large, the Board discussed the problem at several meetings during the past year. The Board is fully cognizant of the long-established friendship between the Institute and the Association, through its Accident Prevention Division, and realizes that the Institute could never repay in kind the funds expended and the time of individual employees on behalf of the Institute. The Board did not, in any way, wish to jeopardize this long-standing, friendly relationship with Julien Harvey and the Association.

At its meeting on June 1st, the Board appointed a special committee to review the entire matter and arrange an informal discussion with Julien Harvey for the purpose of reviewing the existing arrangements and determining a proper disposition of the Handbook that will meet the approval of all parties concerned.

The special committee met with Mr. Harvey recently and effected an agreement in complete harmony with him and the Association. The results of this meeting will be officially reported at the Annual Business Meeting in Washington. The decision reached on publication of the revised edition of the Handbook will: (1) meet with the approval of ITE members, and (2) continue to maintain the same friendly relationships with Julien Harvey and the Association.

Robert S. Holmes

Automobile Dealers Favor Uniformity of Laws

The National Automobile Dealers Association, in convention at San Francisco, adopted a resolution urging its members and other dealer associations "to cooperate in activities designed to promote the adoption of uniform vehicle laws."

The dealers noted that laws throughout the country are "often contradictory and confusing" and that such non-uniformity has adverse effect on safety and efficiency of highway transportation and on the market for motor vehicles.

PERSONAL ITEMS

The **Philadelphia Inquirer** recently published a series of articles entitled "Gambling with Death". The author, Owen F. McDonnell, received excellent advice from Messrs. **ROBERT A. MITCHELL** and **T. ELMER TRANSEAU**. . . . The Netherlands Traffic Institute, a complementary organization to ITE, recently featured the Eno Foundation report "Parking Lot Operation" as a feature article under the title "Automobile Parking in American Cities", by **CHARLES S. LeCRAW, JR.,** and **WILBUR S. SMITH,** in their house organ "Verkeer en Vervoer". . . . **JAMES T. WHITE,** newly appointed Traffic Engineer for Evansville, Indiana, has his hands full with traffic engineering problems of the "test city" for highway safety conference program. The **American City** magazine gave Evansville quite a spread in the June 1949 issue. . . . **CHARLES UPHAM, SR.** has received an award for distinguished professional attainment from Sigma Tau, a national honorary engineering fraternity. Congratulations! . . . It is rumored that **"SKINNY" DeYOUNG** was under suspicion on the University of Colorado campus during the recent investigation involving the murder of a freshman. **"SKINNY"** was on the campus attending the Colorado Traffic Engineering Conference. We understand he plans a face-lifting expedition to the surgeon. . . . **"TEKE" WILEY** and **CHARLES MICHALSKI** getting plenty of publicity on the proposed parking meter installation for the City of New York in the **Herald Tribune.** The **New York Times,** not to be out-done, photographed **JOHN GIBALA** with the newly-hired **female** Traffic Engineer for **"TEKE'S"** department. . . . **JAMES WICHMAN** requesting a new ITE pin to cover the one destroyed by fire. The local fire chief advises **guys** who preach street safety should not leave light bulbs on extension cords in attics. . . . **"TONY" CARROTHERS,** principal dinner speaker at first Eastern New York Safety Conference this spring. **"TONY"** was recently involved in an extensive 2,000 person interview in a sample study of shopping and parking habits along downtown State Street, Schenectady. . . . **LT. COL. S. M. LUTZ, JR.** has left Maxwell Air Force Base in Montgomery, Alabama, for a "hitch" in Tokyo. He expects to be there for two or more years as Staff Engineer at the Far East Air Forces Headquarters.

SECTION NEWS

Florida Section

The Miami area members of the Florida Section of the Institute of Traffic Engineers met at 7 P.M., June 14, 1939 at Huyler's Restaurant for a very enjoyable dinner. In attendance were Bill Folwell, newly made Junior Member, Edmund Friedman, Member, Earl Reeder, Member, Walter Gottschalk, recent transfer to Member, Raymond Sharp, Local Section Affiliate, and Harley Wise, Guest.

Following the dinner and a short business meeting the group was taken on a tour of inspection through the new Ingraham Parking Garage and the Miami Parking Garage. Both of these structures are new in Miami, the Ingraham Parking Garage having a capacity of approximately 650 cars and the Miami Parking Garage a capacity of about 570 cars. These structures were built on two different lines of architecture, the Ingraham Garage being a five-story affair completely enclosed with an inside ramp while the Miami Parking Garage is of the cantilever type entirely open with the deck so constructed that cars overlap one another from one level to the other.

Another meeting is planned for the month of August as a joint meeting with the newly organized Florida Section of the Illuminating Engineering Society.

Washington Section

On May 18th at the Fairfax Hotel, the Washington Section held its last official meeting of the year attended by thirty-three persons, including fourteen wives and one guest.

A short business meeting, was held, and the following officers were elected for the coming year, LeVerne Johnson, President; Wallace L. Braun, Vice-President, and Wm. F. Boardman, Secretary-Treasurer.

The business meeting was followed by cocktails, dinner and a fine social evening. During the conversation between "horse races" it became evident that the ladies were going to outdo the men at the September convention.

On Saturday, July 9th the Harold Hammond's again demonstrated their incomparable hospitality by loaning their pool and garden for the Washington Section's "Summer Frolic". An afternoon of swimming, badminton and other sports, topped by a picnic supper by the pool was thoroughly enjoyed by twenty-one members, wives and guests.

The highlight of the sports activities was "Watermelon Murder", a game in which two teams of five (not too wise) men attempted to push a well greased watermelon to the proper end of the pool. Aside from several square yards of abraded epidermis the only major casualties were the watermelon, and the referee, who got splashed wetter than the contestants.

Shown above in an informal pose is a portion of the group at the Washington Section's "summer frolic".

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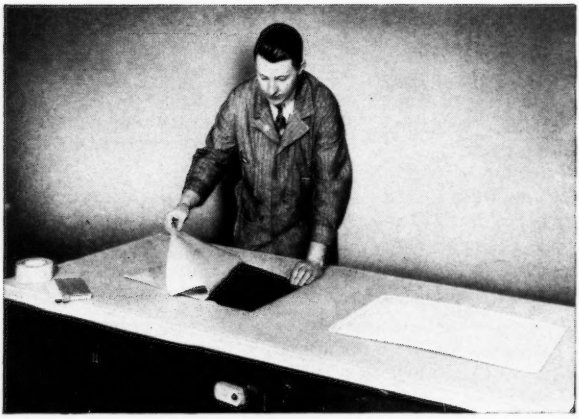

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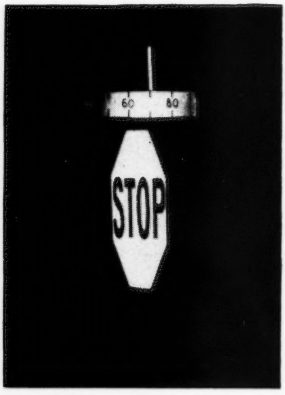

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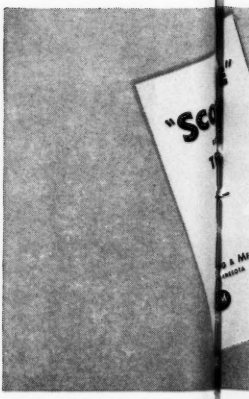

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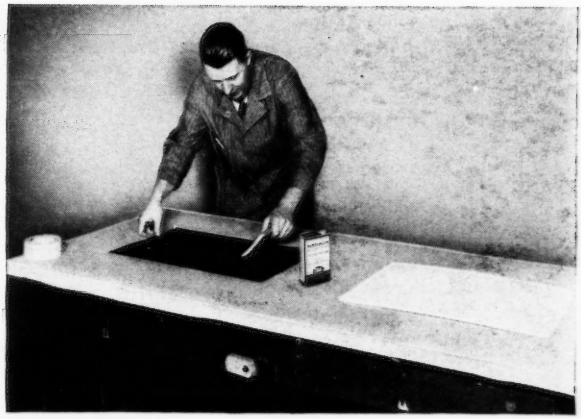
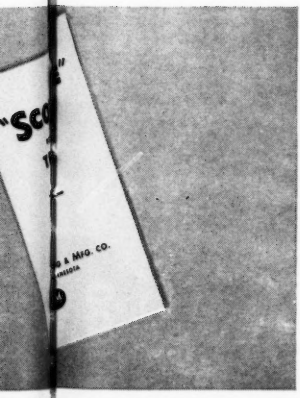
oaiType 2 "SCOTCHLITE"

VACUICATOR for flat or em-sive is ed. Simply position "Scotch-—vacu rest. *Spraying or brush-is no essary. Drying time and* nated



FOR HAND application to flat signs, simply apply activator. *Spraying or brushing of adhesives is no longer necessary. Drying time and racking are eliminated.*



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OBITUARY

We regret to announce that on June 25th Captain John (Jack) Hoover passed away. Jack was 57 years of age and had been ill for quite some time. He had taken a leave of absence for the purpose of going to Arizona for his health but suffered a collapse in Jacksonville, after which he was removed to St. Francis Hospital on Miami Beach where he passed away. Jack, at the time of his death, held the position of Captain of the Traffic Bureau of Miami Beach and was in charge of all traffic engineering activities for that city. He was appointed a patrolman in 1936 and because of hard work and study, and his keen interest in traffic engineering principles, was promoted rather rapidly.

Yearbook Changes

BOOTH, HARVEY D.
Traffic Engineer
Arkansas State Highway Department
SEND MAIL: 127 N. Main Street
Benton, Arkansas

BUTCHER, MASON A.
Traffic Engineer
Capital Transit Company
Washington, D. C.
SEND MAIL: Apt. 303,
6813 Riggs Manor Drive,
Hyattsville, Md.

CAARLS, JOHN F.
Traffic Engineer
Tucson-Pima County
County Building
Tucson, Arizona

DICKERSON, A. F.
Lighting Engineering Division
General Electric Company
920 Western Avenue
West Lynn 3, Massachusetts

FRANKLIN, JEROME D.
City Traffic Engineer
City Hall
35 Lyon Street, N. W.
Grand Rapids 2, Michigan

GRUNOW, ROBERT N.
Highway Engineer
Bureau of Public Roads
504 Atlanta National Building
Atlanta 3, Georgia

HARTUNG, BERNARD C.
Personnel Mgr. and Safety Engineer
Vaughan-Millwork Company
SEND MAIL: P. O. Box 2390
Reno, Nevada

McEACHERN, COOPER
Engineer of Surveys & Plans
Dept. of Traffic & Transportation
Room 902 City Hall
Houston, Texas

POWELL, H. L.
Resident Engineer
Morrison Knudsen
Fort Shafter, Hawaii
SEND MAIL: Kamuela, Hawaii, T. H.

SIEGEL, STANLEY T.
Associate Traffic Engineer
N. J. Motor Vehicle Dept.
Trenton, New Jersey
SEND MAIL: 2300 South Broad St.
Apartment F-3
Trenton 10, New Jersey

TILDEN, CHARLES J.
c/o Mrs. Hitchcock
51 Avon Road
Bronxville, New York

TWISS, FRANCIS E.
Director of Planning and Economics
International Road Federation
550 Washington Building
Washington 5, D. C.

WRIGHT, HARRY S.
Traffic Engineer
442 State Capitol Building
Salt Lake City 1, Utah

WYNN, F. HOUSTON
Yale Bureau of Highway Traffic
311 Strathcona Hall
New Haven 11, Connecticut

SHADE TREES CAN HELP LIGHTING—Street trees, trimmed so that the cones of foliage conform to the cones of light from street lamps, actually increase the effectiveness of street illumination, according to lighting authorities.

Reports from our customers substantiate this fact.
EACH DEATH

EACH DEATH
$53,000

*** $1.41**
PER PERSON IN A CITY OF 75,000

*

This figure represents only the figure provided by the National Safety Council which is tangible enough for quotation. It is an overall figure which also includes the cost of accidents not resulting in fatalities. This figure does not include the costs of courts or law enforcement connected with traffic accidents, nor does it include costs expended to facilitate traffic of which the purchase of traffic control equipment is a part.

For a method of figuring YOUR complete traffic accident costs, use the coupon below.

▼

[illegible] Reports from our customers substantiate this fact.

The "EF" multidial controller was designed for unlimited flexibility, creating an even longer life expectancy. Its unit construction will allow for additional expansion and flexibility 20 years from now as well as today.

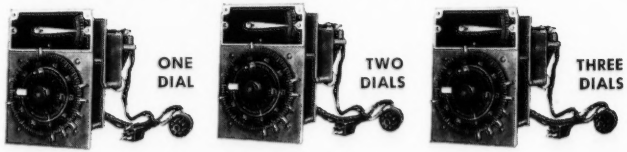
Eagle traffic control equipment will not prevent all traffic accidents, but there is every reason to believe that once in a 20-year period the equipment will be the sole contributor in saving at least one life and that it will be partially responsible for saving other lives and reducing accidents in general.

That's why the Eagle "EF" multidial controller is an **investment in future safety.**

It's saving you additional expense during its long life, too! Unit construction throughout and complete accessibility will pay big dividends in maintenance costs.

Write for Bulletin E10 for more complete description of the "EF" controller.

WHETHER YOU PURCHASE 1 DIAL 2 DIALS or 3 DIALS



Flexibility Is Unlimited
Your controller is wired for 3 dials.
The additional dials can be "plugged in" at any time.

EAGLE *Signal Corporation*

SAFEGUARDING TRAFFIC FOR OVER 20 YEARS

MOLINE - ILLINOIS

Send us EAGLE SIGNAL'S form Z15, which outlines a method of determining traffic accident costs in our city.

Name .....

Title .....

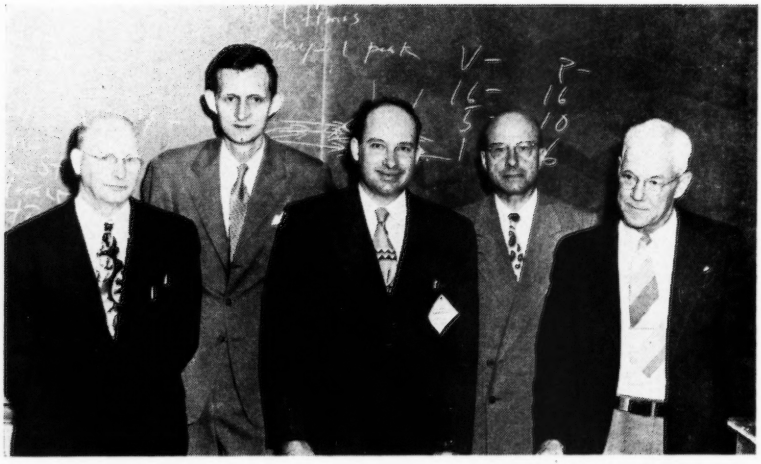
Address .....

City ..... Zone .....

State .....

Colorado Traffic Engineering Conference

The First Colorado Traffic Engineering Conference, held at the University of Colorado June 9-10, was acclaimed a definite success. There was a lot of interest shown in the Conference and the delegates were unanimous in their opinion that a great amount of benefit was derived from their attendance.



The above photograph shows the principal speakers at the recent Colorado Traffic Engineering Conference. Left to right: M. Earl Campbell, Wilbur S. Smith, Al R. Pepper, Professor Warren Raeder, Head of Department of Civil and Architectural Engineering, University of Colorado, and Professor R. L. Downing, University of Colorado.

Seventy-five persons, representing seven states, attended the sessions. HANK BARNES and AL PEPPER deserve a lot of credit for their work in arranging for the Conference. WILBUR SMITH and EARL CAMPBELL led the discussions and stimulated a great deal of thought on the problems confronting engineers in the Rocky Mountain region. The INSTITUTE OF TRAFFIC ENGINEERS was represented by HANK BARNES, EARL CAMPBELL, SKINNY DeYOUNG, GEORGE FISHER, ED JOHNSTON, AL PEPPER, GENE SIMM, and WILBUR SMITH.

A dinner was held at the Blackstone Lodge and a good crowd turned out to hear HANK BARNES make his after dinner speech.

New Appointments . . .

LAWRENCE LAWTON, was recently appointed Assistant Civil Engineer (highway traffic) with the newly formed Department of Traffic Engineering, City of New York. He will be head of the Traffic Signal section, working under the direction of John T. Gibala (Member, I. T. E.), Engineer of Traffic Control. T. T. Wiley, Director, and Charles Michalski, Engineer of Traffic Design, complete the roster of I. T. E. members associated with the Department.

Until his recent change Mr. Lawton has been working under Fred Fisch, Director, Bureau of Arterial Route Planning, New York State Department of Public Works. Prior to this, he was engaged in expressway design in a consulting engineer's office.

ROBERT E. SCHMIDT was recently appointed City Traffic Engineer for Tacoma, Washington. After two years as district traffic engineer in Vancouver for the Washington State Department of Highways, Schmidt resigned to accept the newly-created position. Reporting directly to the City Engineer, I. T. E. Member D. E. Morris, Schmidt will set up a traffic engineering department for Washington's third largest city. Bob was a member of the Yale Bureau Class of 1947, previous to which time he was employed by the New York State Department of Public Works in Buffalo. The district traffic engineer position in Vancouver has been taken over by Jim Gallagher, who just completed the Bureau course in May, 1949.

"Fix-Proof" Traffic Tickets

Numerous cities throughout the United States have adopted the "fix-proof" ticket system to foil traffic offenders who try to get tickets fixed. Ordinarily tickets are made out in quadruplicate. The first copy is sent directly to the courts, thus by-passing any place where the ticket might be taken care of. Second copies go to the police headquarters. The arresting officer keeps the third copy for his record while the offender gets the fourth as a reminder to show up in court.

A 1949 listing of traffic training programs of less than an academic semester in duration and sponsored by organizations working on a national scale has been prepared by the National Committee for Traffic Training, a subcommittee of the National Committee for Traffic Safety. Copies may be obtained from Stanley A. Abercrombie, Secretary, National Committee for Traffic Training, 1201 Sixteenth Street, N. W., Washington, D. C.

Shown above is Village President William H. Alexander of Wilmette, Illinois, receiving the ITE Traffic Engineering Award from Harry Porter, Jr., a Director of the Institute. Wilmette won the first prize award in the population class 10,000 to 25,000 for outstanding achievement in traffic engineering activities for the year 1948.

Louisiana Supreme Court Upholds State Department of Highways' Authority to Determine Right-of-Way Widths

In modifying a decision of the District Court for the Parish of Ascension in Louisiana, reducing right-of-way widths which the highway department might acquire from 300 to 200 feet on a section of the Airline Highway, the State Supreme Court has not only strengthened the authority of the State Department of Highways to determine width of right-of-way for highways but has made c'ear the department's right to take land adequate for *future* as well as present needs. State of Louisiana vs. Miss Octavine M. Cooper, et al. (36 So. 2n 22) (1948).

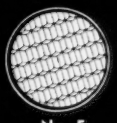
A section of the Louisiana law, as set forth below, was used by the court to substantiate this opinion:

"The width of rights of way shall be fixed by the Chief Engineer of the Department. The width so fixed may be sufficient to adequately accommodate the future improvement of the highway by the construction of additional lanes of pavement, service roads, intersections, traffic distribution devices and grade separations, and to provide sight distances and insure stability and lateral support for the embankments, structures and appurtenances to the highway; to provide for proper drainage, or other wise sufficient in the judgment of the Chief Engineer to provide presently and in the future for the public interest, safety and convenience." (Sec. 47, Act of 1942).

(Highway Research Board Correlation Service—Circular No. 51, January 1949).

Grotelite

PRISMATIC REFLECTORS



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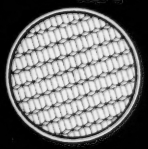

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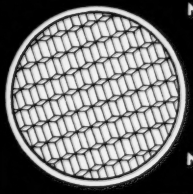

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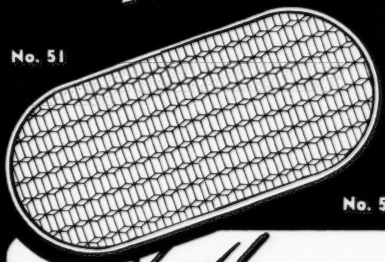

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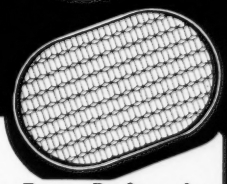

New! **Brighter Than Ever Before!**

Grotelite Prismatic Reflectors with ***new,*** sure-sealing method provide greater protection against dirt and moisture. ***Plastic foil, sealed to the lens and further protected by a metal housing.*** Caution and Warning Signs which have the message reflectorized with Grotelite Prismatics provide the greatest safety value. The intensely illuminated message is what makes the impression on the driver. Now, all Grote Reflector Signs and Signals feature the new Grotelite Plastic Reflector.

Use Grotelite Prismatics for signs made in your own State or Municipal Sign Shop. Most economical. Meet every necessary test! Five models illustrated above. (Two larger sizes available). Get Grotelite Prismatic Reflectors for safety and assurance!

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OTHER TRAFFIC NEWS

Yale Awards Traffic Engineering Fellowships

Ten graduate Fellowships in Traffic Engineering were awarded by the Committee on Transportation of Yale University. These Fellowships provide a stipend of $1400 each and enable recipients to engage in a full academic year of graduate study in Traffic Engineering at the Yale Bureau of Highway Traffic. Two men were awarded scholarships providing for payment of tuition fees.

Nine of the Fellowships were made possible through a grant to the Bureau of Highway Traffic by the Automotive Safety Foundation. Preference was given to those men now employed in street and highway engineering. One Fellowship was based upon a grant from the American Transit Association. This Fellowship, known as the Gordon-Cass Memorial Fellowship, was designated for one especially interested in urban transportation problems.

The ten Fellowships were granted to men from nine different states. Five of the Fellows are employed in state highway departments and two in city traffic engineering bureaus. The two tuition scholarships were awarded to men from Nebraska and California, one working with a state highway department.

Men awarded A.S.F. Fellowships are: Donald E. Cleveland, Seattle, Wash.; Thomas J. Conneely, Cleveland, Ohio; Charles H. Davis, Jr., Martinsville, Virginia; William Marconi, San Francisco, Calif.; William L. Marvin, Lansing, Michigan; Edward G. Mogren, Lansing, Michigan; William R. Stebbins, Jr., Glendale, Missouri; Alfred Vick III, Hampton, Virginia; Burt Whedon, Lincoln, Nebraska. Burton H. Sexton, Indianapolis, Indiana, was awarded the Gordon-Cass Memorial Fellowship.

Men awarded tuition scholarships are Robert L. Meyer, Lincoln, Nebraska, and Martin A. Wallen, Los Angeles, Calif.

Studebaker Boosts Traffic Engineering

In a recent widely publicized brochure entitled "Can America Afford the High Cost of Traffic Congestion?", the Studebaker Corporation emphasized the need for adequately trained men to carry out a practical, intelligent plan for traffic improvement. The brochure states that the traffic problem demands thorough professional study and diagnosis, and recommends that cities obtain the help of experienced, competent, resourceful traffic engineers.

NEWS FROM LYLE SIGNS

Get Your SCHOOL SIGNS Ready Now

Schools teach safety to the child . . . however, signs control traffic . . . and that's your job. When it's your job, it means you're the leader . . . and the public respects leadership that really leads. Protect the child by creating Areas of Safety around the school. Have plenty of signs. They cost little compared to the job they do. Position them for greatest effectiveness. Keep them clean, bright and noticeable with frequent paintings. Replace old signs with new Lyle School Signs. These illustrated here are standard, proved and effective. Use the handy order card for immediate needs. Ask for the new Lyle Sign Manual.

Help the traffic . . . give it signs it can see, and obey!

Free: LYLE SIGN MANUAL

Send for your copy of this authoritative manual on standard signs.

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The Peruvian Good Roads Association Inaugurated

The International Road Federation announces the inauguration of its affiliate, the Peruvian Road Association, in Lima on March 31st. Eduardo Dibos, Vice-President of the Goodyear Company in Peru and President of the Touring and Automobile Club of Peru, was elected President of the newly formed organization.

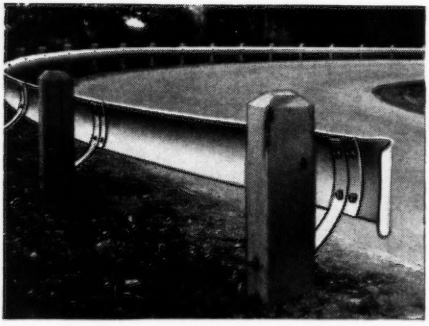
The International Road Federation was formed last year by the North American petroleum, rubber and automotive industries for the improvement and extension of roads in all countries of the world. The new Peruvian affiliated association will work in close cooperation with the International and the other Latin American road federations for the promotion of adequate roads there, with the accent on feeder and farm-to-market connections.

New Vice Presidents of Twin Meter Sales

Mr. William S. McGrath, special representative of International Meters, Inc., and Mr. G. Frederick Allison, sales and service engineer of that company, have been appointed vice presidents of the Twin Meter Sales Corporation of the South, General Sales Manager W. H. Johnson of International Meters announced today.

The Twin Meter Sales Corporation of the South represents International Meters, Inc., manufacturers and distributors of Alfco Twin Automatic Parking Meters, throughout the southern states. International Meters is a subsidiary of the American-LaFrance-Foamite Corporation, the world's oldest and largest producer of fire-fighting equipment.

Both Mr. McGrath and Mr. Allison will reside and make their headquarters in Asheville, N. C.



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Resilient convex steel rail safely deflects cars back on the road Low-mounted springs absorb impact, minimize damage to car and occupants

Maximum STRENGTH
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Maximum VISIBILITY
Minimum COST . . .
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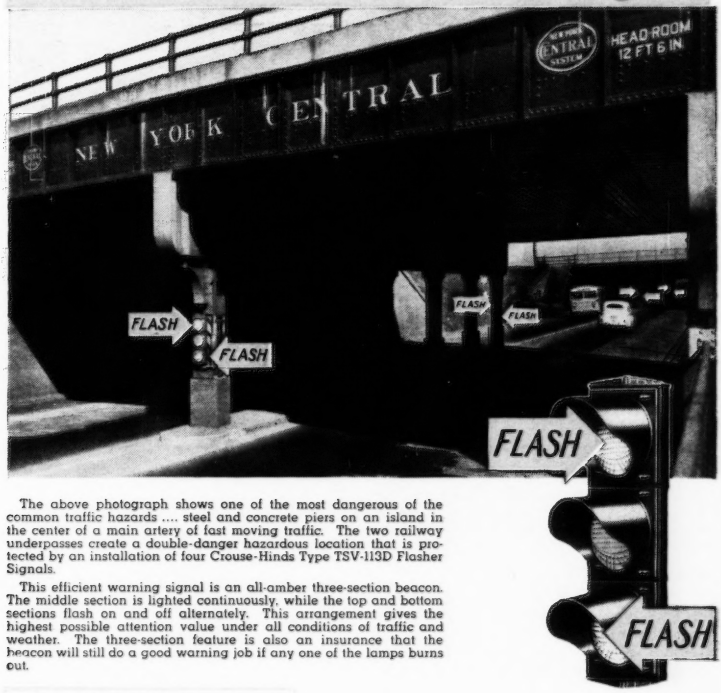
CROUSE-HINDS *Flasher* Signals



The above photograph shows one of the most dangerous of the common traffic hazards .... steel and concrete piers on an island in the center of a main artery of fast moving traffic. The two railway underpasses create a double-danger hazardous location that is protected by an installation of four Crouse-Hinds Type TSV-113D Flasher Signals.

This efficient warning signal is an all-amber three-section beacon. The middle section is lighted continuously, while the top and bottom sections flash on and off alternately. This arrangement gives the highest possible attention value under all conditions of traffic and weather. The three-section feature is also an insurance that the beacon will still do a good warning job if any one of the lamps burns out.

Crouse-Hinds Catalog 226 lists a complete line of traffic signals, beacons, flashers, and a series of controllers designed to help you solve your traffic control problems from simple installations up to the most complex heavy traffic problem. Send for your copy.

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CONDULETS • TRAFFIC SIGNALS • AIRPORT LIGHTING • FLOODLIGHTS

September 18-21—KANSAS CITY, MISSOURI

American Public Works Association. 55th Public Works Congress, Municipal Auditorium. Executive Director, 1313 East 60th Street, Chicago, Illinois.

September 19-23—STATE COLLEGE, PENNSYLVANIA

Fleet Supervisor Course, Pennsylvania State College. Prof. Amos E. Neyhart, Course Director, Institute of Public Safety, Pennsylvania State College, State College, Pennsylvania.

September 19-23 — FRENCH LICK, INDIANA

Illuminating Engineering Society. National Technical Conference. Executive Secretary, 51 Madison Avenue, New York 10, N. Y.

September 21-24 — OKLAHOMA CITY, OKLAHOMA

American Association of Motor Vehicle Administration. Biltmore Hotel. Executive Secretary, 910 17th Street, N. W., Washington 6, D. C.

September 25-28 — WASHINGTON, D. C.

Institute of Traffic Engineers, 20th Annual Meeting, Wardman Park Hotel. Executive Secretary, Strathcona Hall, New Haven 11, Conn.

October 2-5 — ATLANTIC CITY, NEW JERSEY

American Transit Association. Annual Convention. Hotel Traymore. Executive Manager, 292 Madison Avenue, New York 17, N. Y.

October 10-12—CLEVELAND, OHIO

American Society of Planning Officials. Annual Meeting. Statler Hotel. Executive Secretary, 1313 East 60th Street, Chicago, Illinois.

October 10-13—PITTSBURGH, PA.

International Municipal Signal Association. Annual Meeting. Secretary, 11 W. 42nd Street, New York 18, New York.

October 10-14 — SAN ANTONIO, TEXAS

American Association of State Highway Officials. 35th Annual Meeting. Executive Secretary, 1220 National Press Building, Washington 4, D. C.

October 24-28—CHICAGO, ILLINOIS

National Safety Council. 37th Annual Safety Congress. General Manager, 20 N. Wacker Drive, Chicago 6. Illinois.

December 4-8 — PALM BEACH, FLORIDA

International City Managers Association. 35th Annual Conference. Executive Director, 1313 East 60th Street, Chicago, Illinois.

December 13-15 — WASHINGTON, D. C.

Highway Research Board. Annual Meeting. Director, 2101 Constitution Avenue, Washington 25, D. C.

New Signal Company Formed

Southern Signals, Incorporated, advises they have acquired by purchase, all jigs, fixtures, patterns and the complete inventory of signal materials, as well as certain orders on hand of Southern Switch & Signal Company, Inc., now out of business, and that they are again in production on a full line of traffic signal equipment and related products.

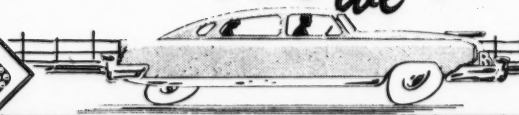
The president and directing manager of Southern Signals, Incorporated, is Mr. E. J. Schulenburg, who is also president of Time-O-Matic Company, Danville, Illinois, and is widely known in the signal field, having been associated with manufacturers of this type equipment for several years. Other key members of the new organization are men formerly connected with the old company and who are thoroughly trained in this line of business.

SOUTHERN SIGNALS, INC.
Shreveport, Louisiana

STAY ON THE RIGHT TRACK . . .
with MIRO-FLEX

RAIL ROAD CROSSING

RAIL OR ROAD *we mark 'em . . .*



US 256

You can't miss with Miro-Flex traffic control signs and street-name assemblies that keep your share of the motoring public on the track! Motorists appreciate good signs from Miro-Flex, *America's finest complete sign line.* Offered plain embossed or reflectorized, with glass or plastic buttons. Finished in baked on enamel. Offered standard or special. *Send for catalog.*

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Institute Offers Advanced and Undergraduate Studies

Plans of study on the undergraduate and graduate levels in the field of Transportation and Traffic Engineering under the sponsorship of the Institute of Transportation and Traffic Engineering, University of California at Berkeley, are now available.

The undergraduate work in Transportation Engineering is offered as the Transportation Option in Civil Engineering. Aim of this plan of study is to provde a basic professional Civil Engineering education, with some emphasis on subjects which pertain to transportation problems that will be met by the Civil Engineering graduate. Major portion of the work for the first two years consists of fundamental courses in the physical sciences, which provide the basis for further engineering education, and which are practically identical for all students in the College of Engineering.

In the final two undergraduate years, the basis of the curriculum is a series of subjects which cover the principal phases of Civil Engineering and which are identical for all Civil Engineering students. The complete curriculum for students who major in Transportation Engineering include several courses which cover the elements of this particular field. Included is a three semester-unit course in Traffic Engineering consisting of two lectures and one laboratory each week.

Graduate courses, seminars, special study and/or research, available through the staff and facilities of the Institute include: Advanced Highway Design; Highway Planning and Economics; Traffic Engineering Characteristics; Traffic Engineering Operations (including Traffic Safety); Traffic Engineering Laboratory; Airport Planning and Design; Highway Materials (Soils, Asphaltic Mixtures, Portland Cement, Concrete); Airphoto Analysis and Interpretation (Applied to Transportation Problems).

Special study and research may be undertaken on the Los Angeles campus in which emphasis is placed upon the human factors in transportation engineering, such as driver characteristics.

Aids to Traffic Planning

- **TRAFFIC ENGINEERING MAGAZINE**
- **1948 INSTITUTE PROCEEDINGS**

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No eye can miss or mistake KARPARK'S full red and white signals. In legal operation only the white dials are seen. When parking time ends, down come the red violation signals, completely covering the dials. The extent of overtime is plainly shown. Infractions are quickly spotted. Superior visibility is another entry in the KARPARK list of outstanding advantages.

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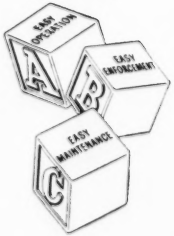

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HOUSTON IN 1950

ON THE SHELF

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MISS BARBARA PRATT
Librarian,
Yale Bureau of Highway Traffic

American Municipal Association

Progress on traffic. Chicago, the association, 1949. unpaged. mimeo. A short resume of current action by cities to solve their traffic problems. Prepared for the association by F. M. Kremel, Director of the Northwestern Traffic Institute, and the Traffic Division of the International Association of Chiefs of Police.

American Standards Association

Nationally recognized standards in state laws and local ordinances. New York, the association, April, 1949. 56p. $1.00 Four papers analyzing the question, "How can nationally recognized standards legally be used in state laws and local ordinances." In addition, there are excerpts from several model statutes and ordinances proposed by organizations that have been working on the problem.

Automobile Club of Southern California

An analysis of pedestrian fatalities for Los Angeles city. Los Angeles, the club, 1948, variously paged, no price listed. A brief analysis of facts available in regard to the record of the last two years.

California, Los Angeles Traffic Survey Comm.

Traffic's a man-sized problem. Los Angeles, the committee, 1949. 7p. no price listed. "The story behind the traffic engineering survey report 'Street traffic management for Los Angeles' ".

Lundberg, Alfred J.

A plan for minimizing decentralization, congestion and parking problems in American cities. Presented at the 21st annual statewide meeting of the highway section of the California State Chamber of Commerce. 1948. 15p. n.p.

McConnell, William A.

New ways of measuring vehicle performance on the road. Presented at the SAE National passenger car, body production meeting. March 1949. 10p. mimeo. n.p. Contains pictures and line pictures of fuel burettes, acceleration timing boards and towing dynamometers.

National Dry Goods Association

Modern parking facilities for department stores. Reprinted from "Stores", January 1949, unpaged. n.p. Contains pictures, drawings and suggestions for new department stores with garage facilities.

Pennsylvania. Department of Highways

Parking survey of Harrisburg. Published in cooperation with the Public Roads Administration. Harrisburg, Pa. The dept., 1949, variously paged, mimeo. n.p.

Public Roads Administration. Federal Works Agency

Highway finance, 1945-1948. Washington, D. C., Public Roads Administration 1949. mimeo, n.p. Contains tables of estimates of revenue, expenditures and debt transactions, for highway and street purposes made by federal, state, county and local governments from 1945-1948.

Virginia. Department of Highways

Lynchburg distribution road. General plan. New York, Parsons, Brinkerhoff, Hall and MacDonald, 1948. n.p. 76p. A general plan of the road with reports on the location, geology, traffic, economics, estimates and comments.

Virginia, Norfolk

The Norfolk story. Annual report for 1948. 31p. n.p. A story of Norfolk as a council-manager city, with comments on traffic congestion, street lighting, and zoning.

Governor of Washington Signs Progressive Highway Legislation

The State of Washington has embarked on a long-range program for developing its highway transportation system, following legislative action that makes sweeping changes in road administration and financing.

Bills signed by Gov. Arthur B. Langlie carry out a substantial number of recommendations made by the legislature's joint Fact-Finding Committee on Highways, Streets, and Bridges, designed to get more results from the highway user's tax dollar.

The program recommended by the legislature's fact-finding committee followed publication of its comprehensive report based on the statewide highway engineering study, prepared through loan of staff of the Automotive Safety Foundation, and a separate finance study by Dr. James C. Nelson of Washington State College.

The committee report recommended a rounded-out program of proper management, accounting and system definition, proper standards of construction and operation, and planned sequence of priority, as well as balanced financing.

Although not all committee recommendations were adopted, committee members have expressed satisfaction with results.

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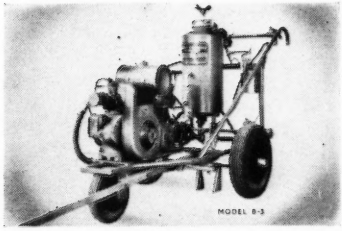

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